

On the huntsman spider genera *Sparianthina* Banks, 1929 and *Anaptomecus* Simon, 1903 from South and Central America (Araneae, Sparassidae)

Peter Jäger^{1,†}, Cristina Anne Rheims^{2,‡}, Facundo Martín Labarque^{3,§}

1 Senckenberg Research Institute, Senckenberganlage 25, D-60325 Frankfurt am Main, Germany **2** Laboratório de Artrópodes, Instituto Butantan, Av. Vital Brazil, 1500, 05503-900, São Paulo, SP, Brazil **3** División Aracnología, Museo Argentino de Ciencias Naturales, Av. Angel Gallardo 470, C1405DJR Buenos Aires, Argentina

† [urn:lsid:zoobank.org:author:A79CD670-BC87-4A1B-8EDF-B391514CCB2A](https://zoobank.org/urn:lsid:zoobank.org:author:A79CD670-BC87-4A1B-8EDF-B391514CCB2A)

‡ [urn:lsid:zoobank.org:author:3DF956BC-9991-4C56-AF80-A240C405A436](https://zoobank.org/urn:lsid:zoobank.org:author:3DF956BC-9991-4C56-AF80-A240C405A436)

§ [urn:lsid:zoobank.org:author:E5A3479B-B535-4E05-B6CA-355615913065](https://zoobank.org/urn:lsid:zoobank.org:author:E5A3479B-B535-4E05-B6CA-355615913065)

Corresponding author: Peter Jäger (peter.jaeger@senckenberg.de)

Academic editor: Jason Dunlop | Received 3 April 2009 | Accepted 16 June 2009 | Published 29 July 2009

[urn:lsid:zoobank.org:pub:1DBBDBA2-6036-4675-984F-E640BC2A1575](https://zoobank.org/urn:lsid:zoobank.org:pub:1DBBDBA2-6036-4675-984F-E640BC2A1575)

Citation: Jäger P, Rheims CA, Labarque FM (2009) On the huntsman spider genera *Sparianthina* Banks, 1929 and *Anaptomecus* Simon, 1903 from South and Central America (Araneae, Sparassidae). In: Stoev P, Dunlop J, Lazarov S (Eds) A life caught in a spider's web. Papers in arachnology in honour of Christo Deltchev. ZooKeys 16: 115–147. doi: 10.3897/zookeys.16.236

Abstract

The huntsman spider genera *Sparianthina* Banks, 1929 and *Anaptomecus* Simon, 1903 are reviewed. The type species of *Sparianthina*, *Sparianthina selenopoides* Banks, 1929, is redescribed, illustrated, and recorded from Costa Rica for the first time; a lectotype and paralectotype are designated. Three species are transferred to the genus: *Sparianthina pumilla* (Keyserling, 1880) **comb. n.** from *Heteropoda* Latreille, 1804 (lectotype and paralectotype are designated), *Sparianthina rufescens* (Mello-Leitão, 1940) **comb. n.** from *Anaptomecus* and *Sparianthina milleri* (Caporiacco, 1955) **comb. n.** from *Macrinus* Simon, 1887. The ♂ of *S. rufescens* (Mello-Leitão, 1940) **comb. n.** and the ♀ of *S. milleri* **comb. n.** are described for the first time. Three new species are described: *Sparianthina adisi* **sp. n.**, *S. deltshevi* **sp. n.**, and *S. saaristoi* **sp. n.** The male and female of *Anaptomecus longiventris* Simon, 1903 are described for the first time and the species is recorded from Panama for the first time. Two new species are described: *Anaptomecus temii* **sp. n.** and *A. levyi* **sp. n.**

Keywords

Taxonomy, re-description, transfer, review

Introduction

American representatives of the spider family Sparassidae have been neglected in modern scientific publications. The last revision was by Gerschman and Schiapelli (1965) on the genus *Polybetes* Simon, 1897. Many genera were never recorded after their original publication.

The genus *Sparianthina* Banks, 1929 with its type species *Sparianthina selenopides* Banks, 1929 was described by Banks (1929) within a survey of the spider fauna of Panama. Since then no systematic work listed this genus or species. In recent times, a few South American species were recognised as species *incertae sedis*, among those *Macrinus milleri* Capporiacco, 1955 (Rheims 2007). This latter and two additional species are transferred here to the genus *Sparianthina*. Three new species are described. A re-diagnosis of the genus is given by means of the copulatory organs.

A similar case is the genus *Anaptomecus* Simon, 1903 which was known for a long time exclusively from its type species *Anaptomecus longiventris* Simon, 1903 before Mello-Leitão (1940) described a second species: *A. rufescens*. No records were published since then except for one juvenile of *A. longiventris* from Costa Rica (Lapinski et al. 2002).

The present paper is one in a series of papers treating Sparassidae from the Americas (Jäger and Rheims 2008; Rheims 2007, 2008; Rheims and Jäger 2008; Rheims et al. 2008) and aims to revise the two genera *Sparianthina* and *Anaptomecus*.

Material and methods

Types and non-type material were examined from the following collections: AMNH – American Museum of Natural History, New York, United States of America; IBSP – Instituto Butantan, São Paulo, Brazil; MACN – Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires, Argentina; MBUC – Museo de Biología, Universidad Central de Venezuela, Caracas, Venezuela; MCNB – Museu de Ciències Naturals de Barcelona; MCZ – Museum of Comparative Zoology at Harvard University, Cambridge, United States of America; MNHN – Muséum National d’Histoire Naturelle, Paris, France; MZPW – Museum of the Institute of Zoology, Polish Academy of Science, Warsaw, Poland; NHM – Natural History Museum, London, United Kingdom; NHMW – Naturhistorisches Museum, Vienna, Austria; NHRS – Naturhistoriska Riksmuseet, Stockholm, Sweden; SMF – Senckenberg Museum, Frankfurt, Germany.

It was not possible to take all measurements due to the fragile condition of some of the types. Material was examined and is preserved in 70% denatured ethanol. Female copulatory organs were cleared in lactic acid or clove oil. GPS data in square brackets were taken from Google Earth. Measurements are in millimetres. Styles of description are according to Jäger (2008) and Rheims (2008). Positions of tegular structures, e.g., embolus and conductor, are given as clock positions on the left palp in ventral view.

Abbreviations used in the text: ALE – anterior lateral eyes; AME – anterior median eyes; DTA – distal tegular apophysis; PJ – consecutive number for specimens of Sparassidae examined by Peter Jäger; PLE – posterior lateral eyes; PME – posterior median eyes; RTA – retrolateral tibial apophysis; SD – number for Sparassidae with DNA/tissue-sample, Coll. Jäger, SMF; I-IV – legs I-IV.

Illustrations were made using a Leica MZ 12.5 / MZ 16 and a Leitz Wetzlar 751739 stereomicroscope with camera lucida attachments. Pictures were taken with Leica DFC 500 and Nikon DXM1200 digital cameras mounted on a MZ 16A and Nikon SMZ1500 stereomicroscope respectively. Extended focal range images were composed with Leica Application Suite version 2.5.0 R₁ and Helicon Focus 3.10.3 or 4.01.

Taxonomy

Family Sparassidae Bertkau, 1872

Genus *Sparianthina* Banks, 1929

Sparianthina Banks, 1929: (description of genus). Roewer 1954: 684. Bonnet 1958: 4110. Platnick 2009.

Type species by monotypy: *Sparianthina selenopoides* Banks, 1929.

Extended diagnosis. Small sized Sparassidae with total length: 5.2-9.8. Chelicerel teeth with 3 (in exceptional cases with 4) promarginal and 4 to 8 retromarginal teeth; chelicerel furrow with denticles, mostly arranged in a long row (Figs 10, 26, 33, 38, 43, 52, 63). Eye arrangement similar to Heteropodinae (Jäger 1998) with lateral eyes larger than median eyes and anterior eye row recurved, posterior eye row slightly recurved to straight. Posterior lateral eyes close to transition between narrow head part and thoracic part of prosoma (Figs 25, 32, 39, 44, 53, 62). Lateral projections of trilobate membrane extending beyond median hook (Fig. 11). Female palpal claw with moderately elongated teeth (Figs 13, 64; Jäger 2004: fig. 15 sub *Anaptomecus* sp.). Males with tegulum shifted basally, leaving space in the distal alveolus for a strongly developed subtegulum (e.g., Figs 2, 6). Embolus in some species with embolic apophysis, membranous conductor situated on a membranous base, thus being movable (Fig. 9). Heavy dorsal tegular apophysis (DTA) present, situated dorsally from embolus and being in tight contact with subtegulum by a hook or other appendages (Figs 1-2, 4). RTA arising medially to distally from tibia with complex shape and more than one apex. Females hardly diagnosable by their copulatory organs; in most species known so far epigynal furrows (“epigyneale Falte/Furche” sensu Järvi 1912, 1914) only present in anterior epigyne (Fig. 46: EF), not connecting to epigastric furrow (exception: *S. pumilla* comb. n.), posterior epigyne slightly extending beyond epigastric furrow as a rounded median extension. Internal duct system with one pair of glandular appendages in functionally initial part, i.e. in anterior part.

Redescription. Total length (♂♂ and ♀♀) 5.2-9.8. Prosoma as long as wide. Cephalic region slightly higher than thoracic region. Fovea long and conspicuous on posterior third of prosoma. Eyes arranged in two rows, the anterior recurved and posterior straight or very slightly recurved. AME slightly smaller than ALE and further apart from each other than from laterals. PME smaller than PLE, equidistant. Clypeus low, as high as or slightly lower than AME diameter. Chelicerae longer than wide, the two retrolateral basal teeth smaller than others. Intermarginal denticles present, mostly scattered at the base of the cheliceral groove. Gnathocoxae parallel, longer than wide with dense scopula on internal margin (Fig. 45). Leg formula 2143. Tarsi I-IV with pair of pectinate claws bearing 15-20 short and slightly curved teeth. Female pedipalp with single pectinate claw with 5-6 long and curved teeth. Opisthosoma slightly triangular, longer than wide. Tracheal spiracle contiguous to spinnerets. Anal tubercle small and triangular, covered by a few long hairs. Six spinnerets: anterior lateral spinnerets contiguous, conical and bi-segmented. Basal segment slightly elongate and cylindrical. Distal segment short and truncated. Posterior median spinnerets conical and short. Posterior lateral spinnerets conical and bi-segmented. Basal segment elongate and cylindrical. Distal segment short and truncated.

Male palp: Tibia slightly longer than cymbium, with one retrolateral, one dorsal and three prolateral spines. Distal margin with small ventro-retrolateral, triangular projection and retrolateral RTA. Cymbium with large median alveolus and elongate dorsal scopula. Subtegulum oval, smooth. Tegulum with retrolateral swelling and sub-embolic projection, the latter notched onto the subtegulum. Embolus with wide base and distally narrowed, with one or two small projections at its base. Conductor long and hyaline.

Female epigynum: epigynum divided longitudinally into a median septum and lateral borders. Lateral borders smooth, lacking projections. Anterior atrium bearing pair of copulatory openings. Vulva with long and convoluted internal duct system with small, anterior glandular projection close to copulatory openings. Fertilisation ducts very long and hook shaped.

Distribution. Costa Rica, Panama, Colombia, Venezuela, Guyana (undescribed species are known from Ecuador, Trinidad and Tobago, French Guyana).

Composition. *Sparianthina selenopoides* Banks, 1929, *Sparianthina pumilla* (Keyserling, 1880) comb. n., *Sparianthina rufescens* (Mello-Leitão, 1940) comb. n., *Sparianthina milleri* (Caporiacco, 1955) comb. n., *Sparianthina deltshevi* sp. n., *Sparianthina adisi* sp. n., *Sparianthina saaristoi* sp. n.

Relationships. *Sparianthina* resembles in several characters Heteropodinae from Asia and Africa: Eye arrangement with lateral eyes larger than median eyes and at least the anterior eye row distinctly recurved, denticles in cheliceral furrow present in combination with 3 promarginal teeth, long teeth on the ♀ palpal claw and trilobate membrane with all three elements, i.e., median hook and lateral projections well developed and of about the same size (Jäger 1998). Cheliceral denticles occur in various genera of Sparassidae, e.g., in the Asian genera *Gnathopalystes* Rainbow, 1899, *Prychia* L. Koch, 1875 and *Tychicus* Simon, 1880, in some African, European and Asian species of

Eusparassus Simon, 1903, and in the South American genus *Adcatomus* Karsch, 1880 [only females of *A. flavovittatus* (Simon, 1897)] (Jäger 1998, 2001; Rheims 2008). All these species have less than three promarginal teeth on the chelicerae and are not considered closely related to either Heteropodinae or *Sparianthina*. The character combination of denticles with three promarginal teeth is known from Asian, Australian, and African Heteropodinae. Moreover, it occurs in some representatives in East Africa and Madagascar (Jäger 2004). However, as Sparassidae exist with denticles and three retromarginal teeth in combination with different character states in eye arrangement and female palpal claw, *Sparianthina* is not included in Heteropodinae. An extended systematic grouping (“Heteropodinae s. l.”) may include Heteropodinae s. str. (sensu Jäger 1998, 2002), East African, Madagascan (key in Jäger and Kunz 2005: 166; *Berlandia* Lessert, 1921, species group near “*Rhitymna*” *saccata* Järvi, 1914) and South American (*Sparianthina*, *Sadala* Simon, 1880, *Anaptomecus* Simon, 1903) genera.

***Sparianthina selenopoides* Banks, 1929**

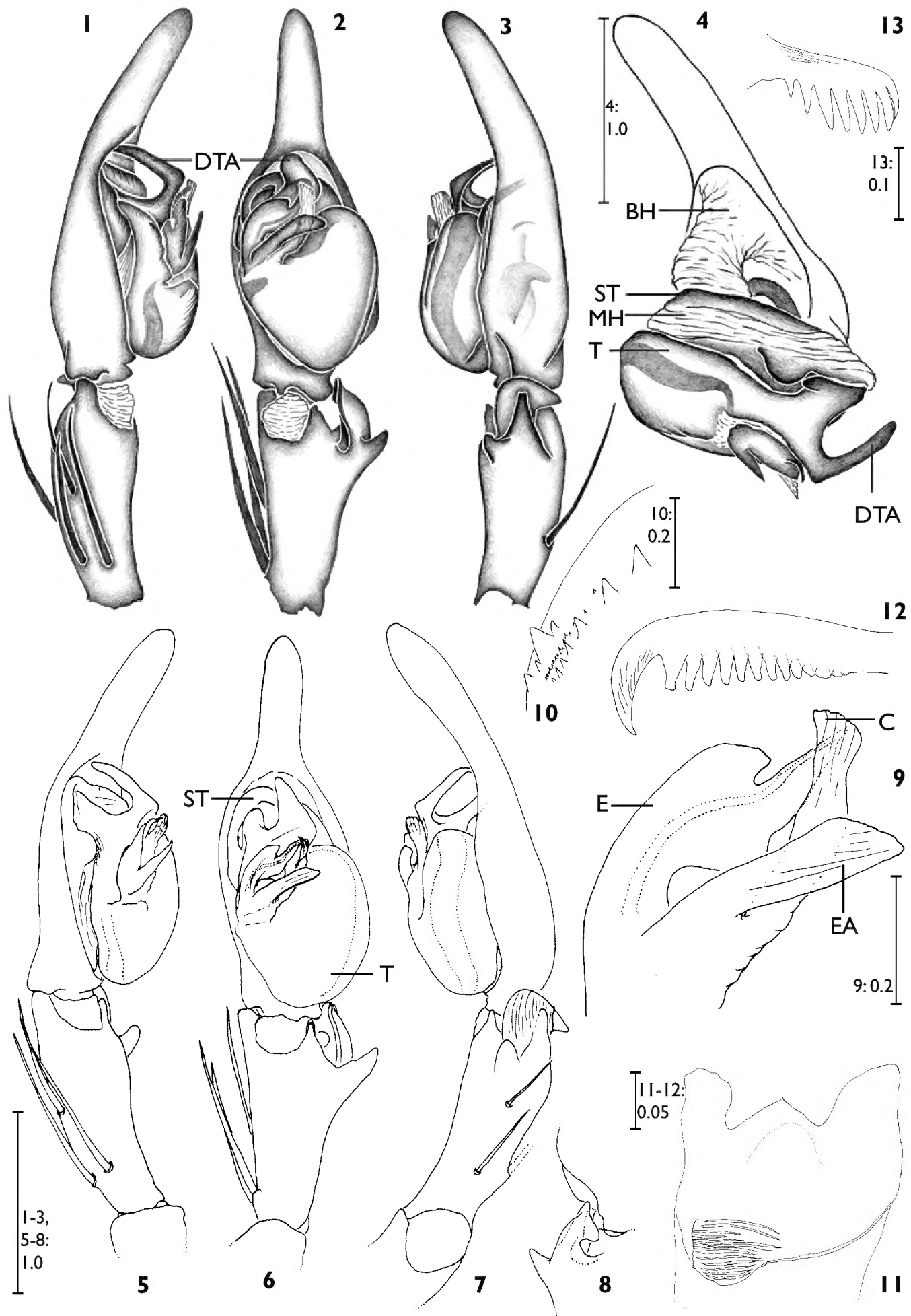
Figs 1-21, 74-75

Sparianthina selenopoides Banks, 1929: 80, pl. 2, fig. 28 (description ♂ and ♀; Syntypes: 1 ♂ (PJ 797), 1 ♀ (PJ 798), Panama, Barro Colorado [9°9'53.36"N, 79°50'21.21"W], Canal Zone, 17 July, Banks, MCZ 23023, examined). Roewer 1954: 684. Bonnet 1958: 4110. Platnick 2009.

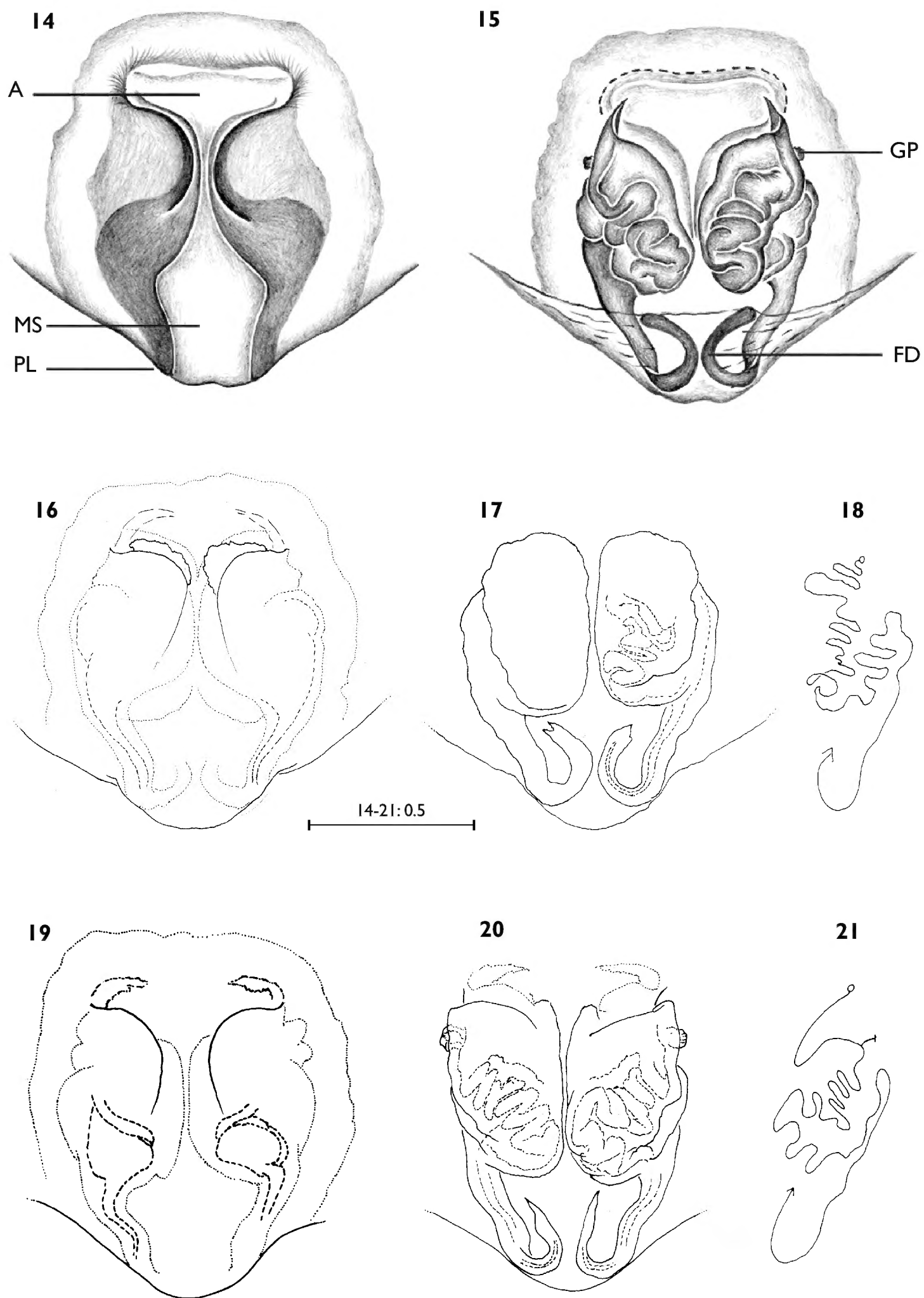
Note. For reasons of stability and considering that it concerns a genus type, the ♂ syntype is herewith designated the lectotype, the ♀ syntype the paralectotype.

Further material examined. COSTA RICA. *Limón*: Rio Parismina [10°17'13.46"N, 83°21'21.11"W], 0 m altitude, on shrubs, 2 ♂♂ (PJ 885-886), 2 ♀♀ (PJ 887-888), 1 subadult ♂, 1 juv. (NHMW). *Heredia*: Puerto Viejo, La Selva, 1 ♂, 1 ♀, 1980-1983, W. Eberhard leg. (MCZ 69110, 69111). PANAMA. *Bocas del Toro*: Punta de Peña, 1 ♀, 1907, R.E.B. McKenny leg. (USNM); *Canal Zone*: Barro Colorado Island, 9 ♂♂, 16 ♀♀, 24 juv., 1934-1954, A.M. Chickering leg. (MCZ 69055, 69056, 69057, 69058, 69059, 69060, 69061, 69062, 69063, 69064, 69065, 69066, 69067, 69069, 69068, 69070, 69071, 69072, 69112); 2 ♂♂, 17.VII.1924, N. Banks leg. (MCZ 23023); 1 ♀, 20.III.1946, T.C. Schneirla (AMNH); Fort Davis, 1 ♂, 1 ♀, 2 juv., 14.VIII.1936, A.M. Chickering leg. (MCZ 69073); Forest Preserve, 2 ♂♂, 1939-1950, A.M. Chickering leg. (MCZ 69074, 69076); Madden Dam Forest, 1 ♂, 18.VIII.1936, A.M. Chickering leg. (MCZ 69075); French Field, 2 ♂♂, 1 ♀, 2 juv., 17.VIII.1939, A.M. Chickering leg. (MCZ 69079); *Colon*: Summit Gardens, 1 ♂, 1 ♀, 12.V.1964, A.M. Chickering leg. (MCZ 69077); Fort Sherman, 1 ♀, 15.VIII.1939, A.M. Chickering leg. (MCZ 69078).

Diagnosis. Opisthosoma triangular to pentagonal (Figs 74-75). Males: Cymbium tip narrow and elongated (Figs 2, 6); embolus with a distinct subapical widening (Fig. 9); additional, pointed apophysis between embolus and conductor (Fig. 9: EA); DTA



Figures 1-13. *Sparianthina selenopoides* Banks, 1929 from Panama (1-4 ♂ MCZ 69063 5-10 ♂ lectotype 11-13 ♀ paralectotype). 1-9 Left ♂ palp (1, 5 prolateral 2, 6 ventral 3, 7 retrolateral 4 cymbium with bulbus expanded 8 RTA, dorsal 9 embolus, embolic apophysis, conductor, ventral) 10 Left chelicerae, ventral 11 Trilobate membrane, distal metatarsus IV, dorsal 12 Leg claw, lateral 13 Palpal claw, retrolateral. BH – basal haematodocha; C – conductor; DTA – distal tegular apophysis; E – embolus; EA – embolic apophysis; MH – median haematodocha; ST – subtegulum; T – tegulum.



Figures 14-21. *Sparianthina selenopoides* Banks, 1929 from Panama (**14-15** MCZ 69063 **16-18** ♀ paralectotype) and Costa Rica (**19-21** PJ 887, NHMW). **14, 16, 19** Epigyne, ventral **15, 17, 20** Internal duct system, dorsal **18, 21** Schematic course of internal duct system, dorsal. A – atrium; FD – fertilisation duct; GP – glandular pores; MS – median septum; PL – posterior lobe of epigyne.

slender in lateral views (Fig. 4), pointing prolatero-distally in ventral view (Figs 2, 6); RTA with foliate hook-shaped distal part directed dorsally in retrolateral view (Figs 3, 7). Females: Epigynal furrows present on anterior half of epigyne, roundly bent, pointing to median body axis (Figs 14, 16, 19); fertilisation ducts running posteriorad to epigastric furrow, then turning at 180°, forming two hook-like structures; glandular appendages laterally at anterior part of internal duct system, inconspicuous (Figs 15, 17-18, 20-21).

Description. Male (MCZ 69063). Total length 6.0. Prosoma: 3.0 long, 3.0 wide. Opisthosoma: 2.9 long, 2.5 wide. Eye diameters and interdistances: AME 0.18, ALE 0.22, PME 0.14, PLE 0.2, AME-AME 0.14, AME-ALE 0.04, PME-PME 0.24, PME-PL 0.24, AME-PME 0.20, ALE-PL 0.22. Legs: I: femur 6.4, patella 1.9, tibia 7.3, metatarsus 6.2, tarsus 2.2, total 24.0; II: 6.9, 2.0, 8.1, 7.1, 2.4, 26.5; III: 5.1, 1.5, 5.0, 4.7, 1.5, 17.8; IV: 5.4, 1.4, 5.5, 5.8, 2.0, 20.1. Spination: femur I-III: p1-1-1; d0-1-1; r1-1-1; femur IV: p1-1-1; d0-1-1; r0-1-1; tibia I-II: d1-1-1; v2-2-2-0; tibia III-IV: p1-0-1; d1-0-1; r1-0-1; v2-2-0; metatarsus I-III: p1-1-0; r1-1-0; v2-0-0; metatarsus IV: p1-1-2; r1-1-2; v2-0-0. Chelicerae with 3-4 anterior and 7 posterior teeth, and with ca. 17 denticles in one row (Fig. 10).

Palp as in diagnosis. Embolus arising from tegulum at a 9- to 10-o'clock-position, conductor at a 10- to 11-o'clock-position. Tegulum extending strongly beyond cymbium. Sperm duct running marginally (Figs 2, 6).

Colouration. Prosoma orange with small lateral light brown markings. Chelicerae orange with light brown markings. Gnathocoxae pale yellow, distally cream coloured. Labium orange, slightly darker at base. Legs and pedipalps pale orange with small light brown markings and dark brown spots at the base of the spines. Opisthosoma cream coloured with scattered small white markings (Fig. 74).

Female (MCZ 69063). Total length 7.4. Prosoma: 3.3 long, 3.2 wide. Opisthosoma: 4.0 long, 4.0 wide. Eye diameters and interdistances: AME 0.14, ALE 0.20, PME 0.16, PLE 0.22, AME-AME 0.12, AME-ALE 0.08, PME-PME 0.26, PME-PL 0.28, AME-PME 0.20, ALE-PL 0.26. Legs: I: femur 5.2, patella 1.8, tibia 5.4, metatarsus 4.3, tarsus 1.5, total 18.2; II: 5.7, 1.9, 6.1, 4.6, 1.6, 19.9; III: 4.3, 1.5, 3.9, 3.6, 1.2, 14.5; IV: 4.5, 1.3, 4.0, 4.3, 1.5, 15.6. Spination: femur I-II: p1-1-1; d0-1-1; r0-1-1; femur III: p1-1-1; r0-1-1; r0-0-1; femur IV: p1-1-1; d0-1-1; r0-0-1; tibia I-II: d0-0-1; v2-2-2-0; tibia III-IV: p0-0-1; d0-0-1; r0-0-1; v2-2-0; metatarsus I-III: p1-1-0; r1-1-0; v2-0-0; metatarsus IV: p1-1-2; r1-1-2; v2-0-0. Palpal claw with 8 teeth (Fig. 13), leg claws with 14 teeth, proximal teeth blunt and inconspicuous (Fig. 12). Trilobate membrane with broadly pointed median hook and long lateral projections (Fig. 11).

Copulatory organ as in diagnosis. Epigynal field round to rectangular, longer than wide. Posterior margin of epigyne with distinct lobe. Copulatory openings situated at anterolateral end of epigynal furrows (Figs 14, 16, 19). Internal duct system complex with strongly wound ducts (Figs 15, 17-18, 20-21).

Colouration as in male, slightly darker (Fig. 75).

Variation. Males (n=10): total length 5.2-6.9; prosoma 2.7-3.2; femur I 4.9-6.4. Females (n=10): total length 6.4-7.5; prosoma 3.1-3.4; femur I 4.0-5.8.

Distribution. Costa Rica and Panama.

***Sparianthina pumilla* (Keyserling, 1880) comb. n.**

Figs 22-33

Heteropoda pumilla Keyserling, 1880: 237, pl. 6, fig. 129 (description ♂ and ♀; Syntypes, 1 ♂, 3 ♀♀, 1 juv., Colombia, Bogota [4°35'56.33"N, 74°3'56.96"W], NHM 3099-3102, examined). Petrunkevitch 1911: 488. Roewer 1954: 721. Bonnet 1957: 2194. Platnick 2009.

Note. The juvenile is considered as belonging to the type series, although it was not mentioned in the original description. As it was together with the adult specimens in one vial, Keyserling had seen and identified it as belonging to the same species by writing the label to all specimens and not excluding the juvenile from the type series (International Commission on Zoological Nomenclature 1999: 72.4.1). For reasons of stability and considering the potential sympatric diversity, the male syntype is herewith designated the lectotype, the female syntypes and the juvenile syntype as paralectotypes.

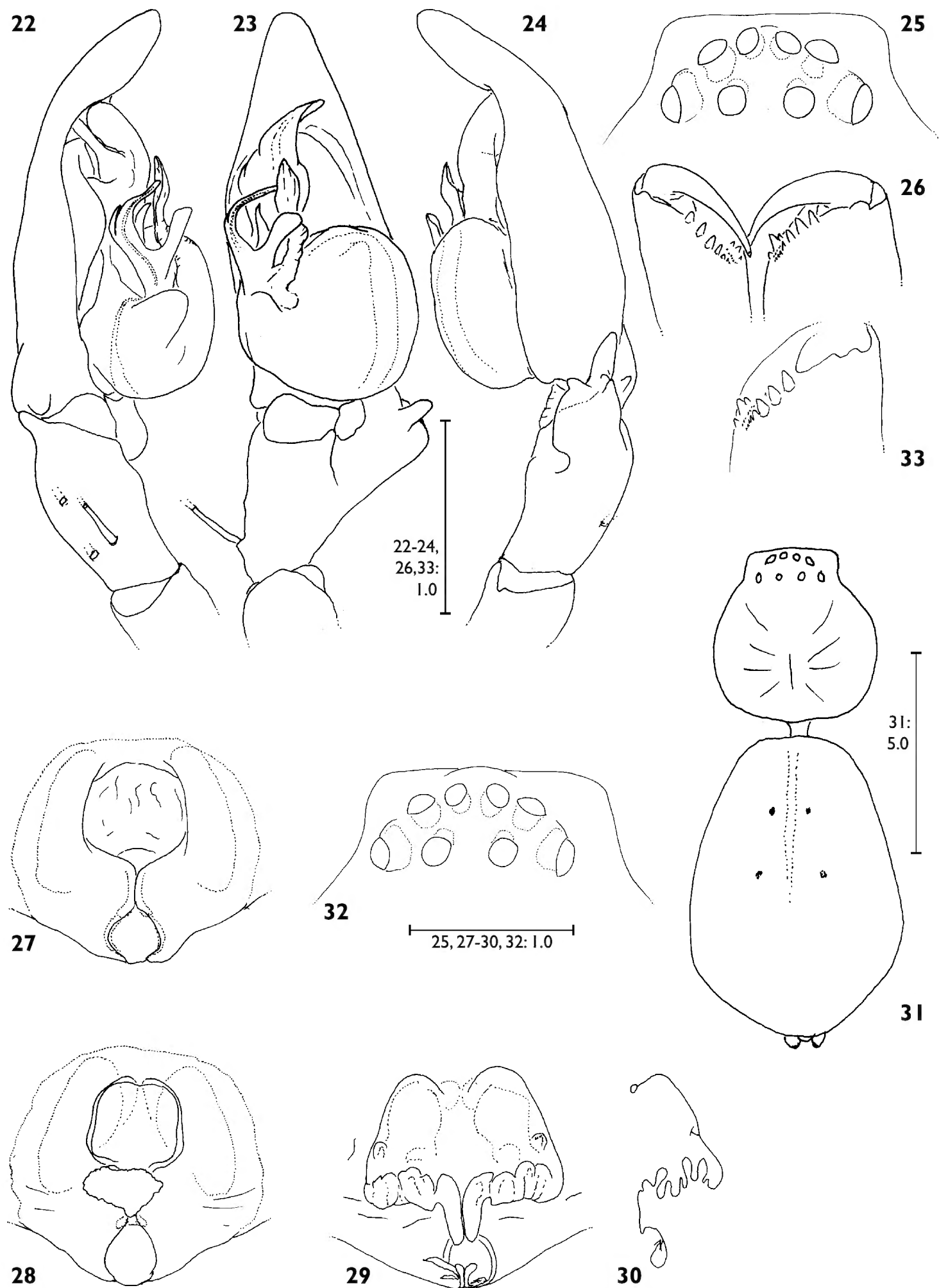
Diagnosis. Males: embolus filiform, distinctly bent (roughly at a right angle); additional apophysis between embolus and conductor, blunt to rounded, widened distally; DTA massive in lateral views, bluntly rounded, pointing retrolatero-distally in ventral view; RTA with two appendages, one smaller pointing ventrally, the other larger, stout and slightly pointed and pointing distally (Figs 22-24). Females: epigynal furrows present over the entire length of epigyne, forming two rounded fields, a larger anterior and a smaller posterior one (Figs 27-28); fertilisation ducts very slender running posteriorad, turning at epigastric furrow; glandular appendages dorsally at anterior part of internal duct system, inconspicuous (Figs 29-30).

Redescription. Male (Lectotype). Total length 6.8. Prosoma: 3.1 long, 3.0 wide. Opisthosoma: 3.5 long, 2.1 wide. Eye diameters and interdistances: AME 0.16, ALE 0.22, PME 0.18, PLE 0.20, AME–AME 0.12, AME–ALE 0.08, PME–PME 0.24, PME–PLE 0.24, AME–PME 0.22, ALE–PLE 0.22. Legs: I: femur 4.4, patella 1.6, tibia 4.7, metatarsus 4.3, tarsus 1.6, total 16.6; II: 5.0, 1.6, 5.1, 4.8, 1.5, 18.0; III: 4.0, 1.3, 3.6, 3.7, 1.3, 13.9; IV: 4.3, 1.3, 4.0, 4.4, 1.8, 15.8.

Palp as in diagnosis. Embolus arising from tegulum at a 9:30-o'clock-position, conductor at a 10-o'clock-position. Tegulum extending strongly beyond cymbium. Sperm duct running submarginally (Fig. 23).

Female (Paralectotype). Total length 9.8. Prosoma: 3.8 long, 3.5 wide. Opisthosoma: 5.6 long, 3.8 wide. Eye diameters and interdistances: AME 0.20, ALE 0.26, PME 0.20, PLE 0.28, AME–AME 0.14, AME–ALE 0.08, PME–PME 0.32, PME–PLE 0.28, AME–PME 0.22, ALE–PLE 0.22. Legs: I: femur 4.2, patella 1.6, tibia 3.9, metatarsus 3.4, tarsus 1.3; II: 4.5, 1.7, 4.2, 3.6, 1.4, 15.4; III: 3.7, 1.4, 3.1, 3.0, 1.1, 12.3; IV: 4.2, 1.4, 3.5, 3.6, 1.2.

Copulatory organ as in diagnosis. Epigynal field rounded, as long as wide. Posterior margin of epigyne with distinct lobe. Copulatory openings situated anteromedially of anterior median field (Figs 27-28). Internal duct system less complex than that of *S. selenopoides*, with wound part of internal duct system transversely arranged. Fertilisation ducts long, bent and narrow (Figs 29-30).



Figures 22-33. *Sparianthina pumilla* (Keyserling, 1880) comb. n. from Colombia (**22-26** ♂ lectotype **27-33** ♀ paralectotypes). **22-24** Left ♂ palp (**22** prolateral **23** ventral **24** retrolateral) **25**, **32** Eyes, dorsal **26**, **33** Chelicerae, ventral **27-28** Epigyne, ventral **29** Internal duct system, dorsal **30** Schematic course of internal duct system, dorsal **31** Habitus, dorsal.

For further details see Keyserling (1880).

Distribution. Colombia (known only from the type locality).

***Sparianthina rufescens* (Mello-Leitão, 1940) comb. n.**

Figs 34-49

Anaptomecus rufescens Mello-Leitão, 1940: 180, fig. 8-9 (description ♀; holotype ♀ [PJ 1662], Guyana, Essequibo River [6°21'53.25"N, 58°37'52.36"W], 1930.1164, No. 3491, A.W. Richards (c.), Oxford University Expedition K.B.G., NHM, examined). Roewer 1954: 712. Platnick 2009.

Notes. Mello-Leitão (1940: 181) listed "type no. 2491". Although the label shows "3941" it is considered the holotype female according to the match of other data. A juvenile (PJ 1663) apparently of the same species was in the same vial, as well as one male Salticidae. The juvenile is not considered to be a syntype, as Mello-Leitão wrote "type" in singular.

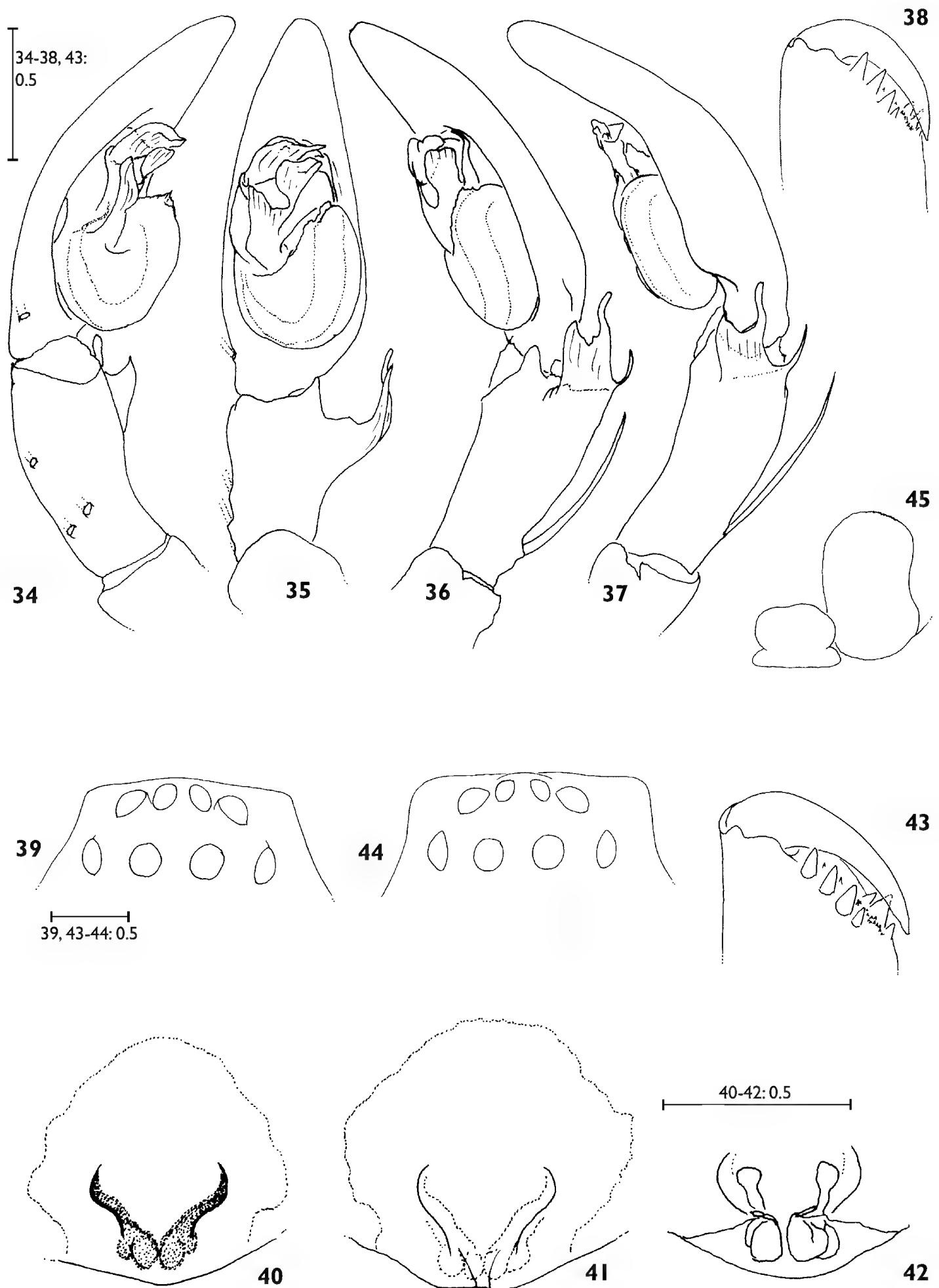
Further material examined. GUYANA. 1 ♂ (PJ 1665), Guest, Maraballi River, Essequibo River, 15 miles above Bartica, Bottle I, No. 68, 1.II.[19]29, R.W.G. Hingston, Mello-Leitão det. (NHM 1930.4.15.48); 1 ♀ (PJ 1664), Guest, Maraballi River, Essequibo River, 15 miles above Bartica, Bottle I, No. 65, 29.X.[19]29, R.W.G. Hingston, Mello-Leitão det. (NHM 1930.4.15.45); 2 ♀♀, Essequibo River, opposite Twasinki Mts. 25.IX.1937, W.G. Hassler (AMNH); 1 ♀, Parish, 1913 (AMNH); 1 ♀, Kangaroo, 13.VI.1911, F.E. Lutz (AMNH). 1 ♀ (PJ 1878), Bovallius leg. (NHRS).

Diagnosis. Males: embolus widened; DTA pointing retrolaterally in ventral view; RTA with three appendages, dorsal one stiletto-like and slightly bent, median one finger-shaped and ventral one roughly triangular (Figs 34-37). Females: epigynal furrows present in the posterior part of epigyne, running diagonally from median to antero-laterally, bent at their anterior end (Figs 40-41, 46). Fertilisation ducts situated in the centre of the internal duct system; glandular appendages long and conspicuous, pointing in an anterior direction, diverging (Figs 42, 48-49).

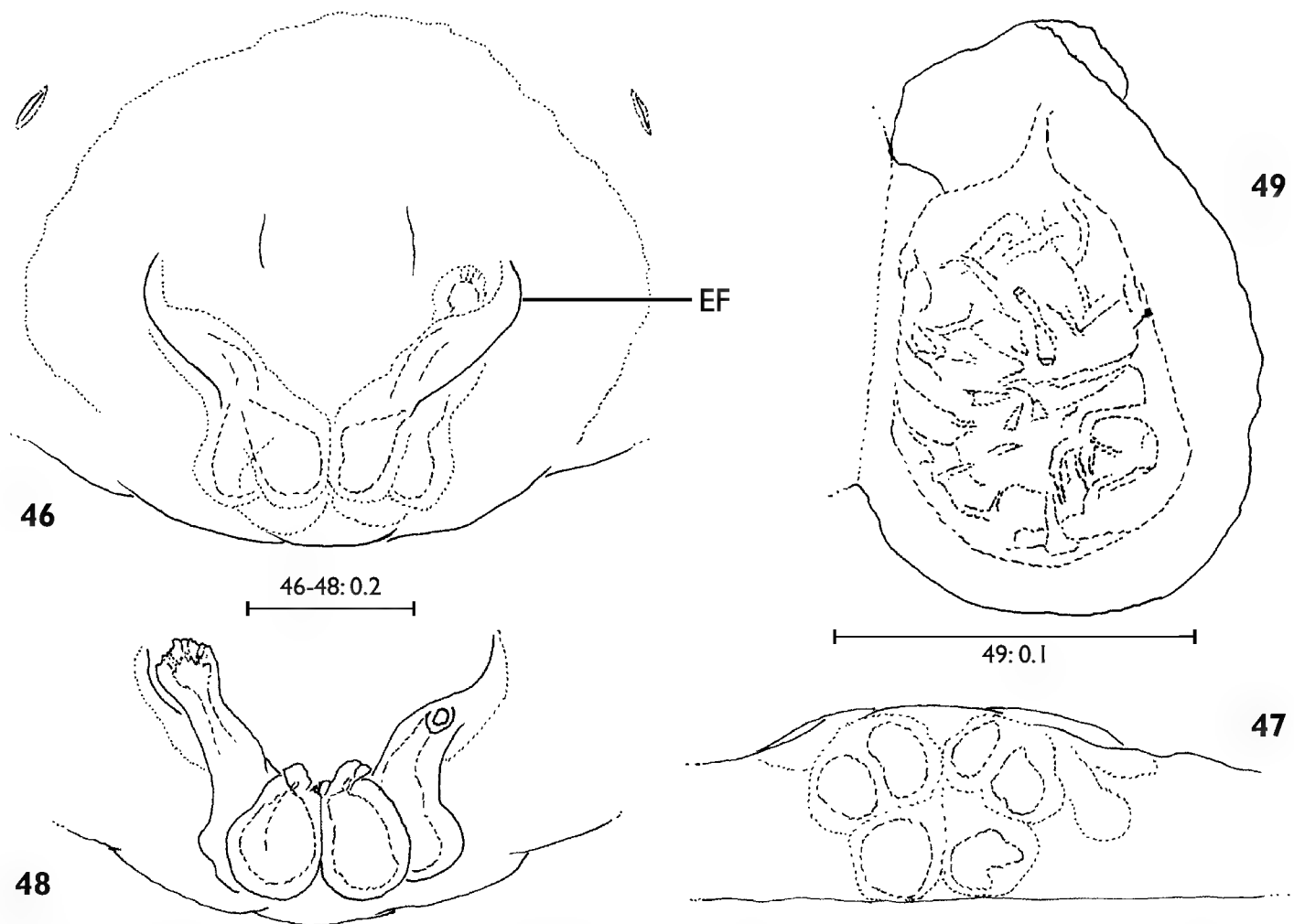
Description. Male (NHM). Total length 5.9. Prosoma: 3.2 long. Opisthosoma: 2.7 long. Chelicerae with 3 anterior and 4 posterior teeth, and with ca. 20 denticles in a row (Fig. 38).

Palp as in diagnosis. Embolus and conductor arising from tegulum at 9- to 9:30-o'clock-position (Fig. 35).

Redescription. Female (AMNH). Total length 8.5. Prosoma: 3.5 long, 3.3 wide. Opisthosoma: 4.8 long, 3.0 wide. Eye diameters and interdistances: AME 0.18, ALE 0.24, PME 0.18, PLE 0.24, AME-AME 0.12, AME-ALE 0.06, PME-PME 0.24, PME-PL 0.26, AME-PME 0.26, ALE-PL 0.22. Legs: I: femur 4.0, patella 1.6, tibia 3.7, metatarsus 3.6, tarsus 1.4, total 14.3; II: 4.5, 1.7, 4.3, 4.0, 1.6, 16.1; III: 3.9, 1.5, 3.2, 3.4, 1.0, 13.0; IV: 3.8, 1.3, 3.2, 3.8, 1.5, 13.6. Spination: femur I-III: p1-1-1; d0-1-1; r1-1-1; femur IV: p1-1-1; d0-1-1; r0-0-1; tibia I-II: p1-0-0; r1-0-0;



Figures 34-45. *Sparianthina rufescens* (Mello-Leitão, 1940) comb. n. from Guyana (**34-39** ♂ NHM 1930.4.15.48 **40** ♀ holotype **41-45** ♀ NHM 1930.4.15.45). **34-37** Left ♂ palp (**34** prolateral **35** ventral **36-37** retrolateral) **38, 43** Chelicerae, ventral **39, 44** Eyes, dorsal **40-41** Epigyne, ventral **42** Internal duct system, dorsal. **45** Labium and left gnathocoxa, ventral.



Figures 46-49. *Sparianthina rufescens* (Mello-Leitão, 1940) comb. n. from Guyana (♀ NHRS, PJ 1878). **46-47** Epigyne (**46** ventral **47** posterior) **48-49** Internal duct system (**48** dorsal **49** detail of right half). EF – epigynal furrow (explanation see diagnosis for *Sparianthina*).

v2-2-2-0; tibia III–IV: p1-0-1; r1-0-1; v2-2-0; metatarsus I–II: p1-0-0; r1-0-0; v2-2-0; metatarsus III: p1-1-0; r1-1-0; v2-2-0; metatarsus IV: p1-1-2; r1-1-2; v2-2-0. Chelicerae with 3 anterior and 4 posterior teeth, and with ca. 20 denticles in a row (Fig. 43).

Copulatory organ as in diagnosis. Epigynal field rounded, without anterior bands; slit sense organs separated by about one of their lengths from epigynal field. Internal duct system with reticulate pattern in large oval parts (Fig. 49), apparently representing narrow ducts.

Colouration. Prosoma, chelicerae, legs and pedipalps brownish-orange. Sternum pale orange with darker margins. Gnathocoxae pale orange, labium pale orange with brown base. Opisthosoma cream coloured with faint brown pattern of transverse chevrons.

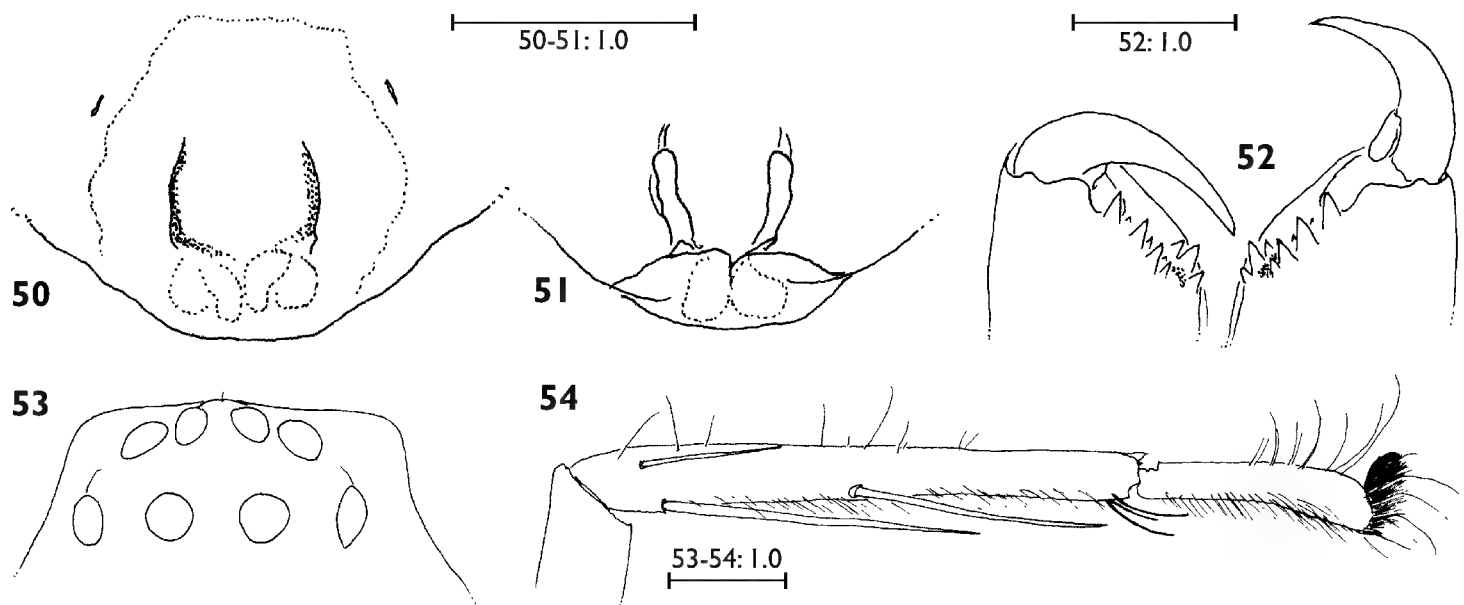
Variation. Total length: 6.3-6.7. Prosoma length: 3.1-3.3.

Distribution. Guyana.

Sparianthina sp.

Figs 50-54

Material examined. 1 ♀ (PJ 1667), French Guyana, Cayenne, R. Yelski leg, U. Taczanowski det. sub *Sparassus* sp. (MZPW).



Figures 50-54. *Sparianthina* sp. from French Guyana (♀ MZPW, PJ 1667) **50** Epigyne, ventral **51** Internal duct system, dorsal **52** Chelicerae, ventral **53** Eyes, dorsal **54** Right leg III, retrolateral.

Note. The copulatory organ of this female is very similar to that of *S. rufescens* comb. n., but differs in the orientation of the epigynal furrows (almost parallel and only slightly bent), in the shape of the glandular appendages (narrow and almost parallel, tip only slightly widened), and in having two short dorsal tibial spines on all legs. It is not described here as a new species, as intraspecific variation in this genus is not known. Conspecific males should help to characterise this form.

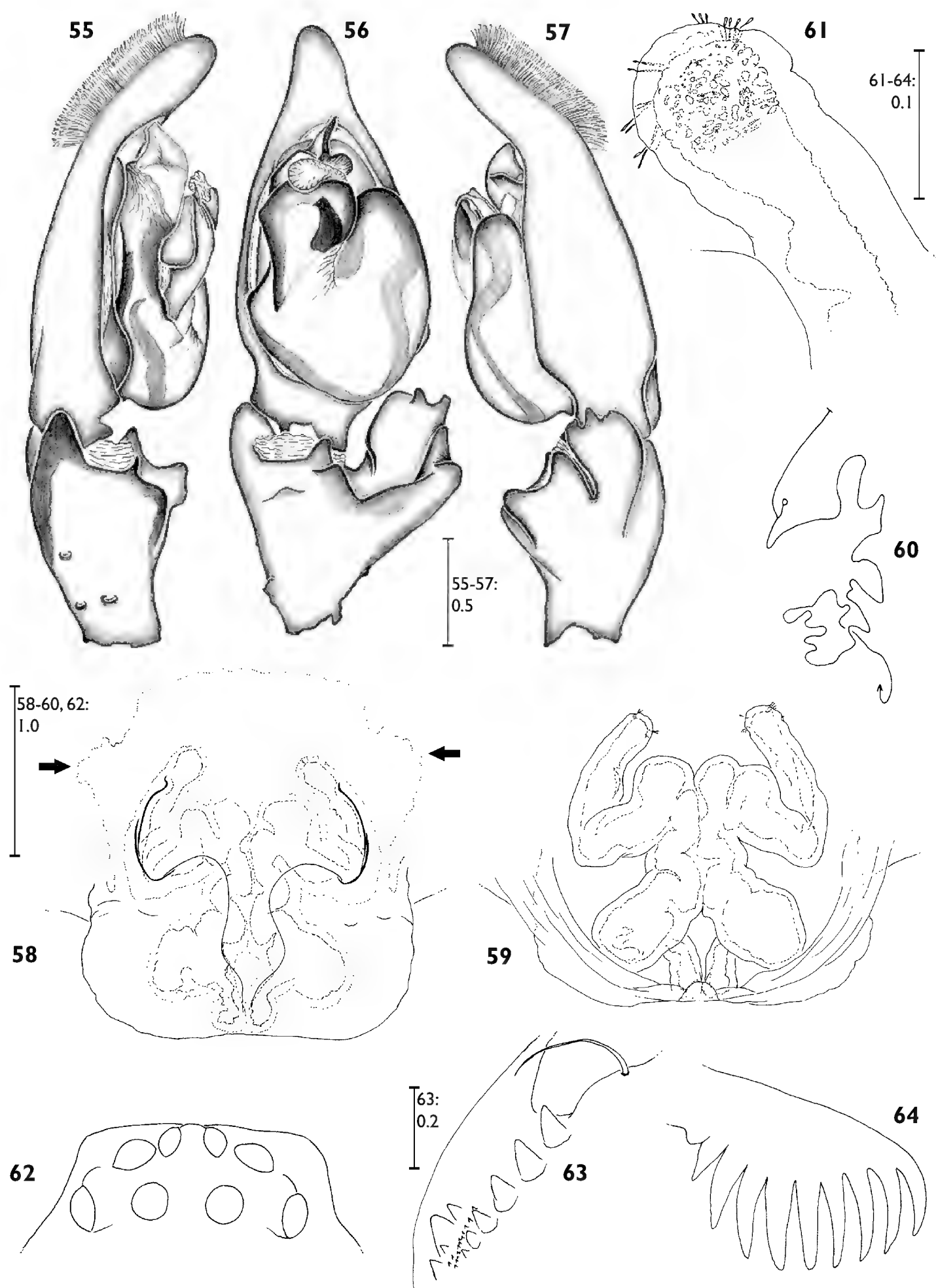
***Sparianthina milleri* (Caporiacco, 1955) comb. n.**

Figs 55-64, 76

Macrinus milleri Caporiacco, 1955: 404, figs 57a–b (description ♂; holotype ♂, Venezuela, Aragua, Rancho Grande, 1.VIII.1949, Racenis leg., MUCV 810, in MBUC, examined). Brignoli 1983: 594. Platnick 2009.

Further material examined. VENEZUELA. 1 ♂, Rancho Grande, 24.VI.–1.VII.1945, W. Beebe (AMNH); 1 ♂, Aragua, Maracay, Rancho Grande, 1.–10.VIII.1987, Bordan & Peck (AMNH); 2 ♂♂, 1.–10.VIII.1987, Bordan and Peck (AMNH). 1 ♀ (PJ 2855), Aragua, Henri Pittier National Park, nr Rancho Grande, 1100–1800 m, 12.–30.XI.1997, T. Pape leg. (NHRS).

Diagnosis. Males: embolus massively widened, conductor directed prolaterally; DTA with well differentiated tip in ventral view pointing retrolatero-distally; sperm duct with retrolateral S-shaped bend; RTA massive with various small appendages, palpal tibia appearing triangular (Figs 55–57). Females: epigynal furrows present over entire length of epigyne (but inconspicuous in posterior part), anterior epigynal furrow situated laterally close to margin of epigynal field, posterior furrows S-shaped, running from lateral to median body axis (Fig. 58); fertilisation ducts situated at epigastric furrow; glandular appendages long and massive, pointing in an anterior direction, converging (Figs 59–61).



Figures 55-64. *Sparianthina milleri* (Caporiacco, 1955) comb. n. from Venezuela (**55-57** ♂ holotype **58-64** NHRS, PJ 2855). **55-57** Left ♂ palp (**55** prolateral **56** ventral **57** retrolateral) **58** Epigyne, ventral (arrows point to lateral outgrowths of epigynal field) **59** Internal duct system, dorsal **60** Schematic course of internal duct system, dorsal **61** Detail of right glandular appendage, dorsal **62** Eyes, dorsal **63** Chelicerae, ventral **64** Palpal claw, retrolateral.

Redescription. Male (Holotype, MUCV 810). Total length 5.7. Prosoma: 2.7 long, 2.7 wide. Opisthosoma: 2.6 long, 2.0 wide. Eye diameters and interdistances: AME 0.24, ALE 0.16, PME 0.22, PLE 0.22, AME–AME 0.10, AME–ALE 0.06, PME–PME 0.24, PME–PLE 0.20, AME–PME 0.18, ALE–PLE 0.24. Legs: I: femur 4.0, patella 1.3, tibia 4.4, metatarsus 3.7, tarsus 1.6, total 15.0; II: 4.6, 1.4, 4.8, 4.1, 1.6, 16.5; III: 3.6, 1.1, 3.3, 3.3, 1.2, 12.5; IV: 4.2, 1.0, 3.8, 4.2, 1.6, 14.8.

Palp as in diagnosis. RTA massive, with wide dorsal branch bearing a small distal-median projection. Ventral branch bifid. Embolus and conductor arising from tegulum at a 9-o'clock-position (Figs 55-57).

Colouration generally brown (Fig. 76). Specimen very badly preserved.

Description. Female. Total length 6.6. Prosoma: 3.0 long, 2.9 wide, anterior width 1.5. Opisthosoma: 3.6 long, 2.5 wide. Eye diameters and interdistances: AME 0.17, ALE 0.25, PME 0.22, PLE 0.27, AME–AME 0.11, AME–ALE 0.05, PME–PME 0.25, PME–PLE 0.24, AME–PME 0.25, ALE–PLE 0.22, clypeus AME 0.33, clypeus ALE 0.29. Palp: femur 1.2, patella 0.7, tibia 1.2, metatarsus -, tarsus 1.7, total 4.8; legs: I 3.5, 1.4, 3.7, 2.8, 1.3, 12.7; II: 4.0, 1.5, 3.9, 3.1, 1.4, 13.9; III: 3.2, 1.2, 2.9, 2.6, 1.1, 11.0; IV: 3.5, 1.0, 3.2, 3.2, 1.4, 12.3. Leg formula 2143. Spination: palp 131, 101, 2121, 1014; femur I–III 323, IV 321; patella 000; tibia 2024; metatarsus I–II 0014, III 2014, IV 3036. Ventral tarsus III and IV with bristles in two rows, tarsus IV with more and stronger bristles. Chelicerae with ca. 15 denticles in a row, basally with two denticles beside this row, 3 (+ 1 small) anterior and 6 posterior teeth (Fig. 63). Palpal claw with 9-10 teeth (Fig. 64). Spinnerets cylindrical.

Copulatory organ as in diagnosis. Epigynal field roughly rectangular, with lateral outgrowths (Fig. 58: arrows) and without anterior bands, longer than wide. Posterior lobe of epigyne almost rectangular with rounded edges, distinctly extending beyond the epigastric furrow (Fig. 58). Internal duct system with wide ducts throughout and with reticulate structure close to glandular pores (Figs 59-61).

Colouration. Body and appendages yellowish-brown. Dorsal prosoma with darker striae and posterior-marginal band, fovea marked. Legs with indistinct spine patches. Sternum, labium, ventral gnathocoxae and coxae bright pale yellow. Opisthosoma without pattern.

Distribution. Known only from the type locality.

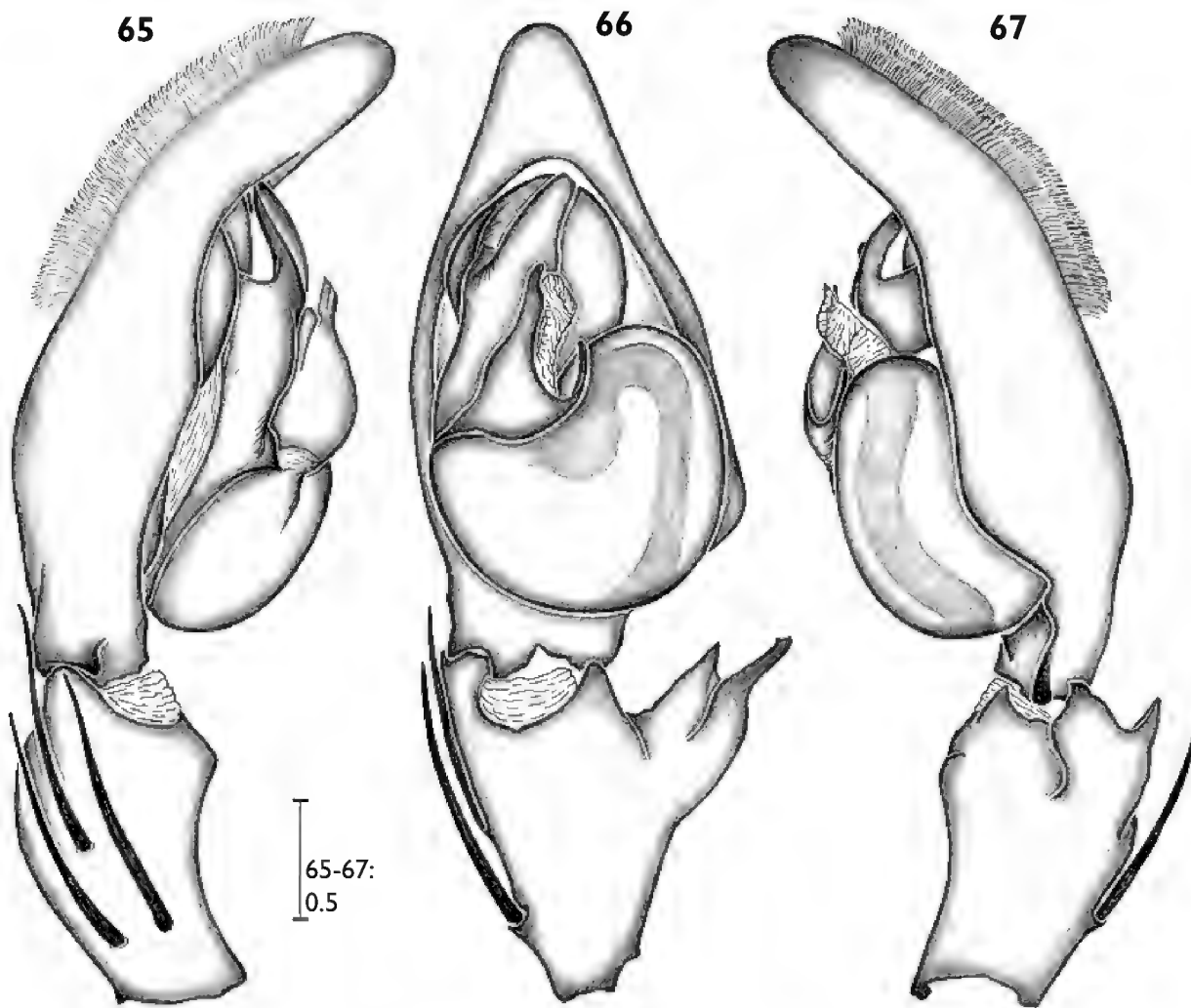
Relationship. As diagnostic characters for *Sparianthina* are congruent with those found in *S. milleri* comb. n. (shifted tegulum, complex RTA, membranous conductor flexible, epigynal furrows only in anterior part, internal duct system of females with glandular appendages, etc.) the species is transferred to this genus. Relationships within the genus cannot be recognised.

Sparianthina adisi sp. n.

urn:lsid:zoobank.org:act:289320CB-B8E3-4C09-90BB-9DA20656D9C5

Figs 65-67, 77

Types. ♂ holotype, Venezuela, Merida, ULA Biological Reserve, 20 km SE Azulita [08°17'N, 72°05'W], 28.VI.–3.VIII.1989, S. and J. Peck (AMNH). Paratypes: 1



Figures 65-67. *Sparianthina adisi* sp. n. from Venezuela (♂ holotype). **65-67** Left ♂ palp (**65** prolateral **66** ventral **67** retrolateral).

♂, same data as for holotype (AMNH); 2 ♂♂, Venezuela, Merida, Mucuy, Tabay [08°38'N, 71°04'W], 19.VI.–24.VII.1989, FIT, S. and J. Peck (IBSP 99860; SMF: PJ 1721); 1 ♂, Venezuela, Merida, El Valle, 15km NE Merida, 24.VI.–2.VIII.1989, S. and J. Peck (AMNH).

Further material examined. VENEZUELA. Merida: 3 ♂♂, Mucuy, Send. Lag. Suero, Tabay [08°38'N, 71°04'W], 19.VI.–24.VII.1989, S. & J. Peck (2 ♂♂ AMNH; 1 ♂ IBSP 99861).

Etymology. The species is dedicated to Joachim Adis (1950-2007) for his important contributions about the Amazonian forest and its ecology and for his longstanding contribution to the study of arachnids in South America; name in genitive case.

Diagnosis. The males of *Sparianthina adisi* sp. n. are distinguished from those of the remaining species of the genus by the bifid RTA with similar sized branches (Figs 66-67). It resembles *Sparianthina deltshevi* sp. n. by the long and slender projection at the retrolateral base of the embolus (Figs 66, 69), but is distinguished from this species by exhibiting a much narrower projection.

Description. Male (AMNH, holotype). Total length 6.6. Prosoma: 3.0 long, 3.0 wide. Opisthosoma: 3.5 long, 2.3 wide. Eye diameters and interdistances: AME 0.16, ALE 0.22, PME 0.20, PLE 0.26, AME–AME 0.08, AME–ALE 0.04, PME–PME 0.22, PME–PLE 0.22, AME–PME 0.16, ALE–PLE 0.18. Legs: I: femur 4.3, patella

1.5, tibia 4.5, metatarsus 3.9, tarsus 1.4, total 15.6; II: 4.9, 1.6, 4.9, 4.2, 1.6, 17.2; III: 3.9, 1.3, 3.4, 3.3, 1.2, 13.1; IV: 4.5, 1.2, 4.1, 4.2, 1.5, 15.5. Spination: femur I–III: p1-1-1; d0-1-1; r1-1-1; femur IV: p1-1-1; d0-1-1; r0-0-1; tibia I–II: v2-2-2-2-0; tibia III–IV: p1-0-1; d0-0-1; r1-0-1; v2-2-0; metatarsus I–II: v2-2-0; metatarsus III: p1-1-0; r1-1-0; v2-2-0; metatarsus IV: p1-1-2; r1-1-2; v2-2-0.

Palp as in diagnosis. Embolus and conductor arising from tegulum at a 9-o'clock-position (Fig. 66). Ventral tibial lobe small and slightly shifted retrolateral. Tegular subembolic projection notched prolaterally to the subtegulum. Conductor hyaline and laminar. Sperm duct running submarginally (Figs 65–67).

Colouration. Prosoma orange-brown, slightly darker at eye area and brown along fovea and thoracic striae. Chelicerae orange. Pedipalps dark orange. Legs orange with light brown markings at spine bases. Sternum yellow with orange margins. Gnathocoxae pale yellow. Labium pale yellow, light brown at base. Opisthosoma pale yellow (Fig. 77).

Female unknown.

Variation. Males (n=8): total length 6.2–7.4; prosoma 3.0–3.6; femur I 3.6–4.5.

Distribution. North-western Venezuela, state of Merida.

Sparianthina deltshevi sp. n.

urn:lsid:zoobank.org:act:2F3915EA-4B34-4A26-BBDF-AC30A4B2D89D

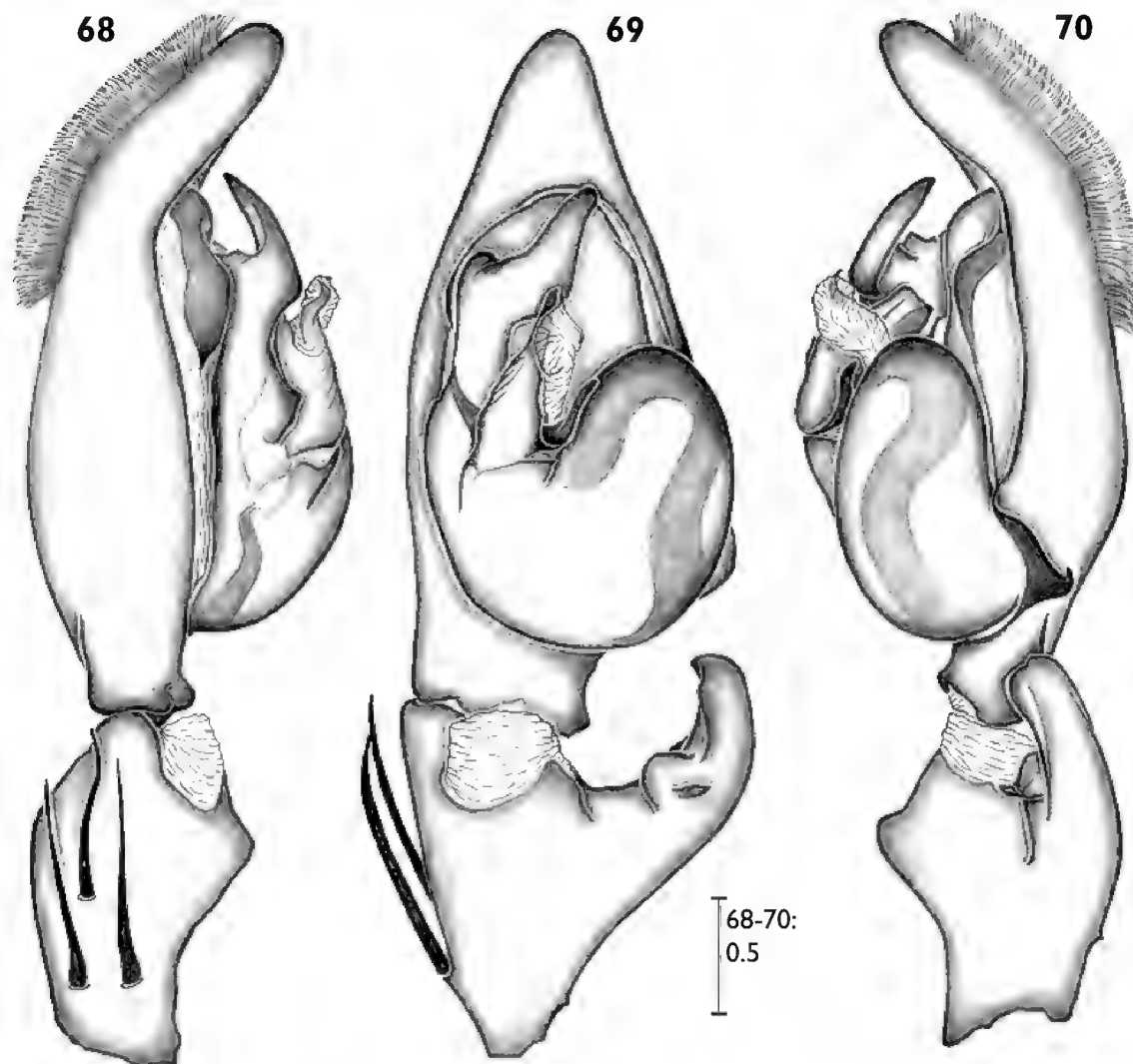
Figs 68–70, 78

Types. ♂ holotype from Venezuela, Merida, ULA Biological Reserve, 20 km SE Azulita [08°17'N, 72°05'W], 28.VI.–3.VIII.1989, S. and J. Peck (AMNH). Paratypes: 2 ♂♂, same data as for holotype (AMNH; IBSP 99859).

Etymology. The species is dedicated to Christo Deltshev on occasion of his 70th birthday for his various contributions to the field of arachnology especially of the Balkan Peninsula; name in genitive case.

Diagnosis. The males of *Sparianthina deltshevi* sp. n. are distinguished from those of the remaining species of the genus by the RTA with a slightly cylindrical dorsal branch and a smaller and distally bent ventral branch (Figs 69–70). It resembles *Sparianthina adisi* sp. n. by the presence of a long and slender projection at the retrolateral base of the embolus but is distinguished from this species by exhibiting a much thicker projection.

Description. Male (AMNH, holotype). Total length 8.0. Prosoma: 3.4 long, 3.1 wide. Opisthosoma: 4.4 long, 2.4 wide. Eye diameters and interdistances: AME 0.18, ALE 0.26, PME 0.22, PLE 0.28, AME–AME 0.12, AME–ALE 0.04, PME–PME 0.24, PME–PLE 0.24, AME–PME 0.28, ALE–PLE 0.24. Legs: I: femur 4.7, patella 1.7, tibia 5.0, metatarsus 4.4, tarsus 1.7, total 17.5; II: 5.2, 1.7, 5.3, 4.8, 1.8, 18.8; III: 4.3, 1.5, 4.0, 3.8, 1.4, 15.0; IV: 4.8, 1.4, 4.6, 4.9, 1.7, 17.4. Spination femur I–III: p1-1-1; d0-1-1; r1-1-1; femur IV: p1-1-1; d0-1-1; r0-0-1; tibia I: v2-2-2-2-0; tibia II: d0-0-1; v2-2-2-2-0; tibia III: p1-0-1; d0-0-1; r1-0-1; v2-2-0; tibia IV: p1-0-1; d1-0-1; r1-0-1; v2-2-0; metatarsus I–II: v2-2-0; metatarsus III: p1-1-0; r1-1-0; v2-2-0; metatarsus IV: p1-1-2; r1-1-2; v2-2-0.



Figures 68-70. *Sparianthina deltshevi* sp. n. from Venezuela (♂ holotype). **68-70** Left ♂ palp (**68** prolateral **69** ventral **70** retrolateral).

Palp as in diagnosis. Embolus and conductor arising from tegulum at a 9-o'clock-position. Sperm duct running marginally with a small bend retrolaterally (Fig. 69).

Colouration. Prosoma brownish-orange, slightly darker along fovea and thoracic striae. Clypeus slightly lighter than prosoma. Chelicerae orange. Legs and pedipalps orange with light brown markings at spine bases. Labium and gnathocoxae orange, distally lighter. Sternum pale yellow with orange margins. Opisthosoma brownish-grey (Fig. 78).

Female unknown.

Variation. Males (n=3): Total length 7.5-8.2; prosoma 3.4-3.7; femur I 4.7-5.5.

Distribution. North-western Venezuela, state of Merida.

***Sparianthina saaristoi* sp. n.**

urn:lsid:zoobank.org:act:AFA6E26E-B16E-4AF3-B268-4BE654281A89

Figs 71-73, 79

Types. ♂ holotype from Venezuela, Merida, Mucuy, Tabay [08°38'N, 71°04'W], 17.VI.-2.VIII.1989, S. and J. Peck, AMNH. Paratypes: 4 ♂♂, Venezuela, Merida, El Valle, 15 km NE Merida [08°35'N, 71°08'W], 24.VI.-2.VIII.1989, S. and J. Peck (2 ♂♂ AMNH; 1 ♂ IBSP 99864; 1 ♂ SMF: PJ 1722); 2 ♂♂, Venezuela, Merida, Telef.

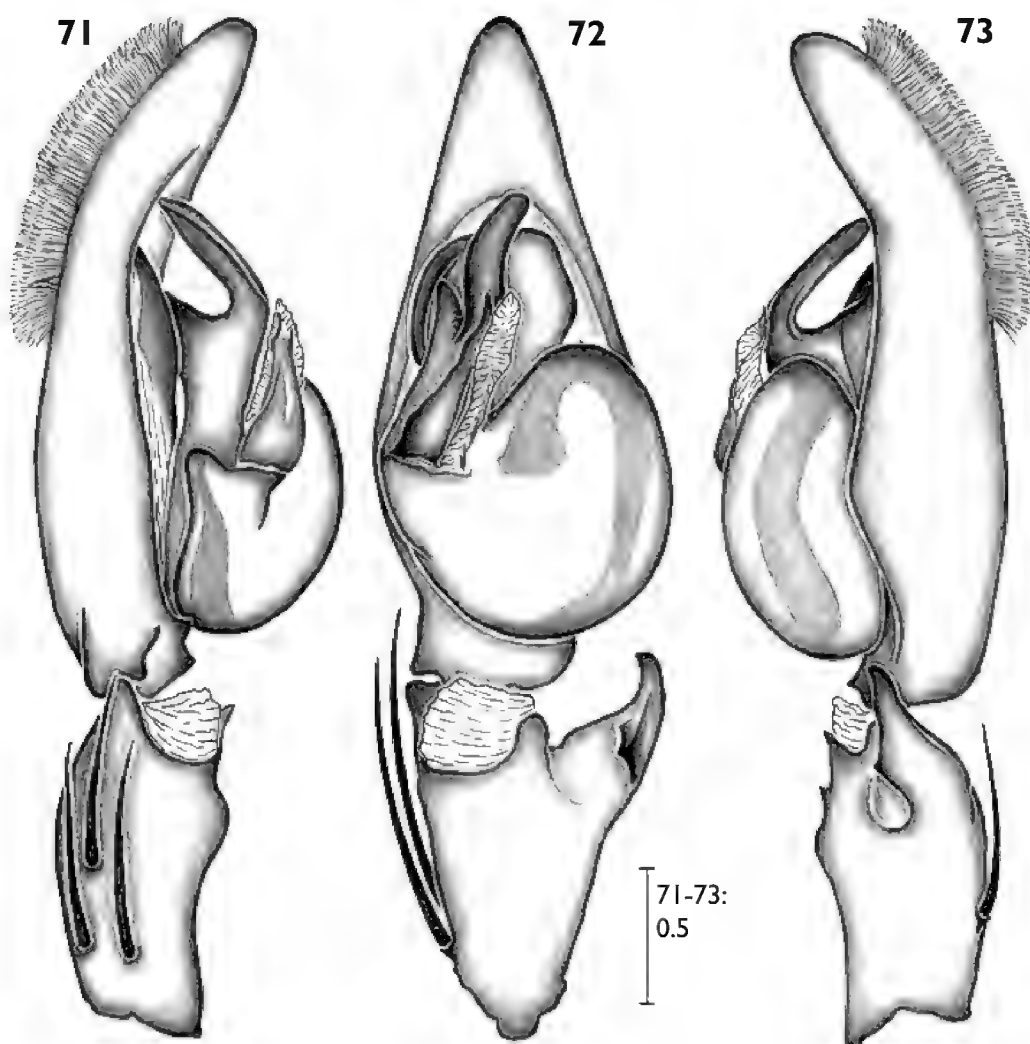
Esta. La Montana [08°35' N; 71°08' W], 27.VI.–26.VII.1989, S. and J. Peck (IBSP 99862; SMF: PJ 3116).

Further material examined. VENEZUELA. *Merida*: 10 ♂♂, Tabay [08°38'N, 71°04'W], Mucuy, Send. Lag. Suero, 17.VI.–2.VIII.1989, S. and J. Peck (AMNH); 1 ♂, 19.VI.–24.VII.1989, S. and J. Peck (AMNH); 12 ♂♂, Merida [08°35'N, 71°08'W], Hechicera, Monte Zerpa, 22.VII.–2.VIII.1989, S. and J. Peck (8 ♂♂ AMNH, 2 ♂♂ IBSP 99863, 2 ♂♂ SMF: PJ 3114-3115); 4 ♂♂, Telef. Esta. La Montana, 27.VI.–26.VII.1989, S. and J. Peck (AMNH); 2 ♂♂, El Valle, 15 km NE Merida, 24.VI.–2.VIII.1989, S. and J. Peck (AMNH); *Tachira*: 1 ♂, Pregonero [08°01'N, 71°45'W], Presa Las Cuevas, 9.–31.VII.1989, S. and J. Peck (AMNH); 1 ♂, Camp Siberia, Lalde, 10.–31.VII.1989, S. and J. Peck (AMNH).

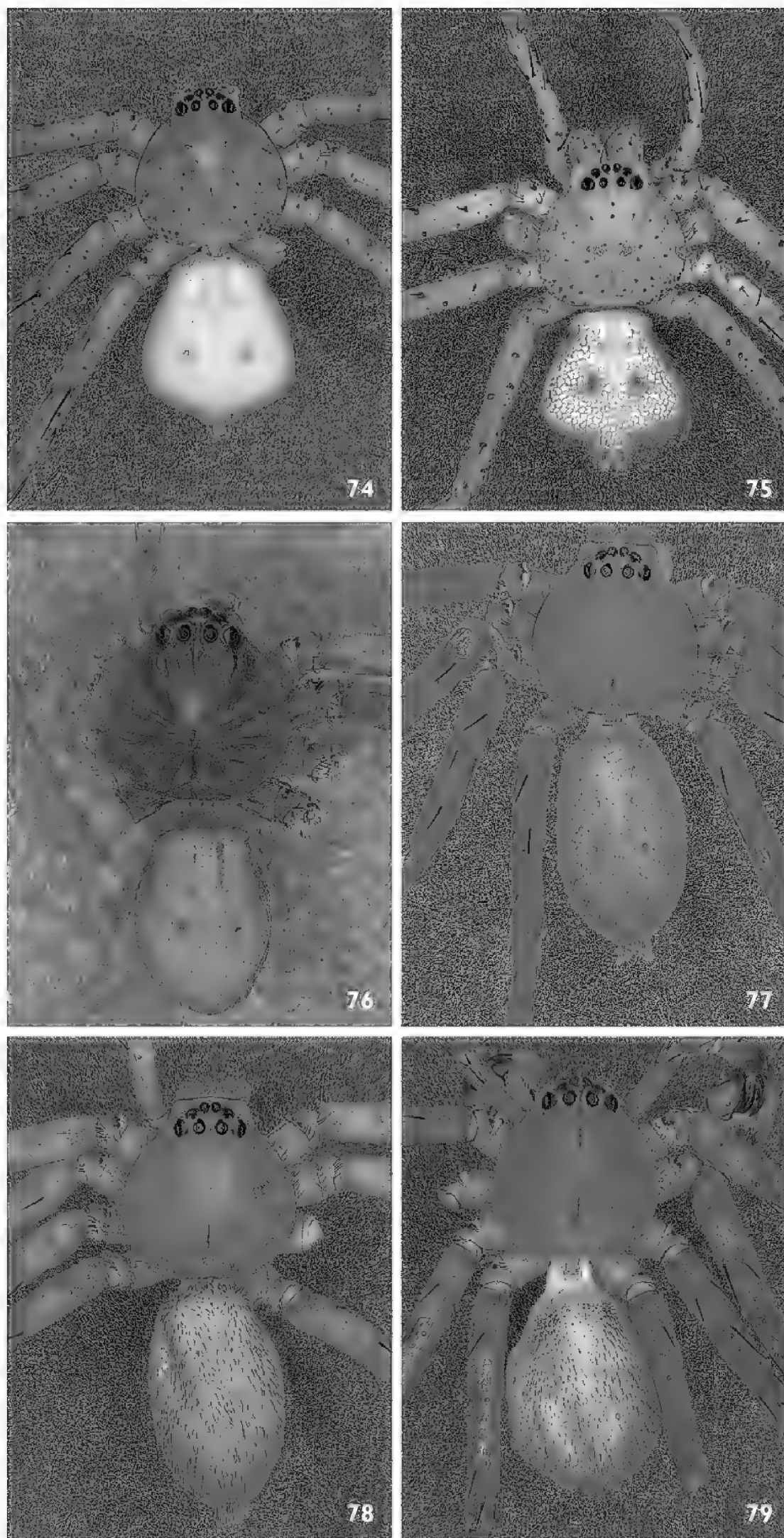
Etymology. The species is dedicated to Michael Saaristo (1938-2008) for his many contributions to the taxonomy of spiders; name in genitive case.

Diagnosis. The males of *Sparianthina saaristoi* sp. n. are distinguished from those of the remaining species of the genus by the slender embolus without projections and by the RTA having only one dorsal branch (Figs 71-73).

Description. Male (AMNH, holotype). Total length 7.6. Prosoma: 3.8 long, 3.0 wide. Opisthosoma: 3.8 long, 2.8 wide. Eye diameters and interdistances: AME 0.22, ALE 0.28, PME 0.22, PLE 0.30, AME–AME 0.08, AME–ALE 0.04, PME–PME



Figures 71-73. *Sparianthina saaristoi* sp. n. from Venezuela (♂ holotype). **71-73** Left ♂ palp (**71** pro-lateral **72** ventral **73** retrolateral).



Figures 74-79. *Sparianthina* spp., habitus, dorsal. **74-75** *S. selenopoides* (**74** ♂ **75** ♀) **76** *S. milleri* comb. n., ♂ **77** *S. adisi* sp. n., ♂ **78** *S. deltshevi* sp. n., ♂ **79** *S. saaristoi* sp. n., ♂.

0.24, PME–PLE 0.26, AME–PME 0.20, ALE–PLE 0.18. Legs: I: femur 4.3, patella 1.5, tibia 4.3, metatarsus 3.9, tarsus 1.5, total 15.5; II: 4.8, 1.5, 5.0, 4.4, 1.7, 17.4; III: 3.9, 1.3, 3.5, 3.4, 1.3, 13.4; IV: 4.6, 1.3, 4.1, 4.6, 1.6, 16.2. Spination: femur I–III: p1-1-1; d0-1-1; r1-1-1; femur IV: p1-1-1; d0-1-1; r0-0-1; tibia I–II: d1-0-1; v2-2-2-2-0; tibia III–IV: p1-0-1; d1-0-1; r1-0-1; v2-2-0; metatarsus I–II: v2-2-0; metatarsus III: p1-1-0; r1-1-0; v2-2-0; metatarsus IV: p1-1-2; r1-1-2; v2-2-0.

Palp as in diagnosis. Embolus and conductor arising from tegulum at a 9-o'clock position. Sperm duct running marginally at the distal and proximal tegulum and submarginally at the retrolateral tegulum (Fig. 72).

Colouration. Prosoma brownish orange, brown along fovea and thoracic striae. Eye borders black. Chelicerae orange-brown. Legs and pedipalps orange with brown markings at spine bases. Labium and gnathocoxae brownish-orange, distally lighter. Sternum pale orange with slightly darker margins. Opisthosoma yellowish-grey (Fig. 79).

Female unknown.

Variation. Males (n=10). Total length 6.0-7.6; prosoma 2.9-3.8; femur I 3.9-4.8.

Distribution. North-western Venezuela, states of Merida and Tachira.

Genus *Anaptomecus* Simon, 1903

Anaptomecus Simon 1903b: 28 (description of genus). Simon 1903a: 1027. Petrunkevitch 1911: 444. Roewer 1954: 712. Bonnet 1955: 313. Lapinski et al. 2002: 4. Platnick 2009.

Note. Simon (1903a) listed genus name and species name with a cross reference to his publication (Simon 1903b) in which he described the new genus and the new species. First of all there is a mistake in this reference, as Simon wrote “1893” instead of “1903”; all other data (journal name, volume number, page number) are correct. Secondly, it might be that he assumed that the genus description would be published first, and added the reference in advance. As the name of the type species (*A. longiventris*) proposed by Simon (1903a) was not available at the time of publication of the genus description (identification key for genera of Heteropodeae) (International Commission on Zoological Nomenclature 1999: Article 68.2), and as the name of the type species was not nominal, i.e. available, it is not valid. Therefore the genus and species names were made available only in Simon (1903b).

Type species by original designation: *Anaptomecus longiventris* Simon, 1903.

Diagnosis. Medium-sized Sparassidae with total length 8.6-14.1. Prosoma flat (Figs 87, 97). Opisthosoma elongated (Figs 98-99). Cheliceral teeth with 3 pro-marginal (median enlarged) and 6-7 retromarginal teeth and denticles in a patch. Eye arrangement similar to Heteropodinae (Jäger 1998) with lateral eyes larger than median eyes, and eye rows recurved. Posterior eye row narrower than that in *Sparianthina*, i.e. more space left between PLE and prosomal margin. Head part of prosoma

extended with almost parallel margins, i.e. PLE distinctly anterior to the transition between head and thoracic part. Median hook of trilobate membrane extending beyond lateral projections. ♀ palpal claw with 5 barely elongated teeth (Figs 92, 112). Tibiae with 4 ventral spines, lacking two additional distal spines present in Heteropodinae. Males: Tegulum pear shaped, sperm duct with U-shaped bend in ventral view; embolus and hyaline conductor situated on a membranous base, thus being movable; massive embolus retrolaterally bent with small teeth at base and a soft lamina at the end, hyaline conductor, RTA simple. Females hardly diagnosable by their copulatory organs; median extension of posterior epigyne forming two indistinct lobes.

Redescription. Dorsal shield of prosoma slightly longer than wide (Figs 98, 107). Eye region slightly elevated (Figs 87, 97). Fovea conspicuous and short on posterior third of prosoma. Eyes arranged in two recurved rows (Figs 88, 108). Clypeus as high as diameter of anterior eyes. Chelicerae longer than wide, with middle anterior tooth larger than others and size of posterior teeth gradually decreasing from proximal to basal. Denticles in distinct patch (Figs 89, 109-110). Gnathocoxae almost parallel, slightly converging distally, longer than wide with dense scopula on internal margin (Fig. 90). Leg formula 1243 or 2143. Tarsi I–IV with pair of pectinate claws bearing 12-20 teeth. Female pedipalp with single pectinate claw with 5 larger teeth and 1-2 tiny teeth. Opisthosoma distinctly longer than wide. Tracheal spiracle contiguous to spinnerets. Anal tubercle small and triangular, covered by few long hairs. Six spinnerets.

Male palp. Tibia shorter than cymbium. Tibia with RTA arising subdistally. RTA simple, slightly twisted and not extending beyond distal tibia. Cymbium narrow, with dense prolatero-dorsal scopula along its entire length. Tegulum in basal half of alveolus, not extending beyond cymbial margin. Embolus and conductor arising at an 11 to 12:30-o'clock-position from tegulum. Embolus curved and slightly twisted. Sperm duct running centrally in tegulum as a U-turn. Conductor hyaline, may be reduced.

Female palpal spination with reduced number of dorsal spines on femur (usually 131 in Sparassidae): femur 121 (111), patella 101, tibia 2121, tarsus 1014. Internal duct system twisted, fertilisation ducts situated medially.

Distribution. Costa Rica, Panama, Ecuador, Colombia.

Composition. *Anaptomecus longiventris* Simon, 1903, *A. temii* sp. n., *A. levyi* sp. n.

Species transferred. *Anaptomecus rufescens* Mello-Leitão, 1940 (see *Sparianthina*, this paper)

Relationships. See discussion under *Sparianthina*. Characters of *Anaptomecus* such as presence of denticles at cheliceral furrow in combination with three anterior teeth, eye arrangement, female palpal claw with long teeth, and basally shifted tegulum may represent evidence of a closer relationship to *Sparianthina*. Differentiating characters between the genera are the conformation of denticles (patch vs. row), female palpal claw with primary tooth sensu Jäger (2004) shorter vs. longer than following secondary teeth, shape of opisthosoma (triangular to oval vs. elongated), and trilobate membrane with median hook longer vs. shorter than lateral projections.

***Anaptomecus longiventris* Simon, 1903**

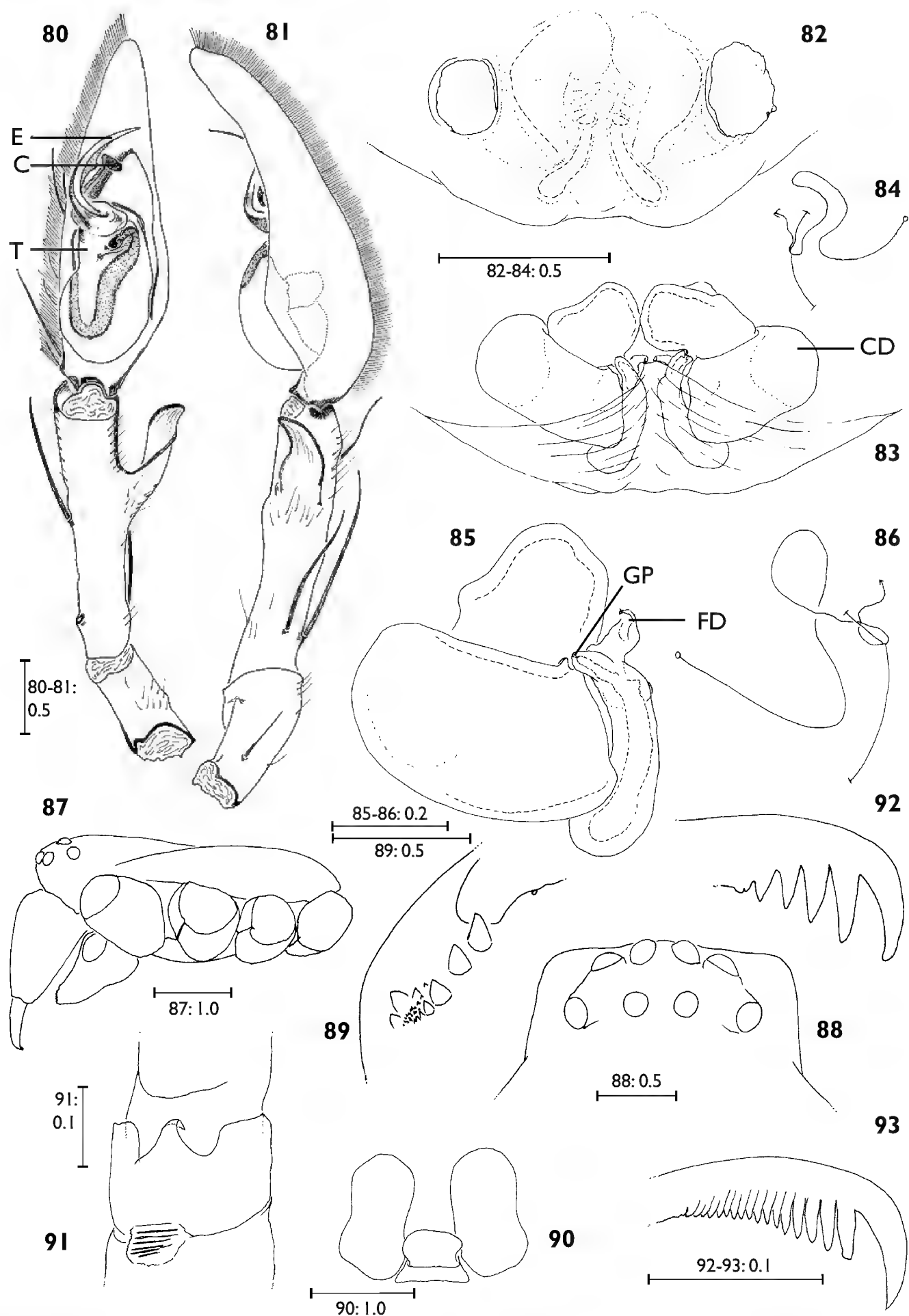
Figs 80-99

Anaptomecus longiventris Simon 1903: 28 (description immature; holotype juvenile, Ecuador, Cayambe, MNHN, examined). Petrunkevitch 1911: 444. Roewer 1954: 712. Bonnet 1955: 313. Lapinski et al. 2002: 4. Platnick 2009.

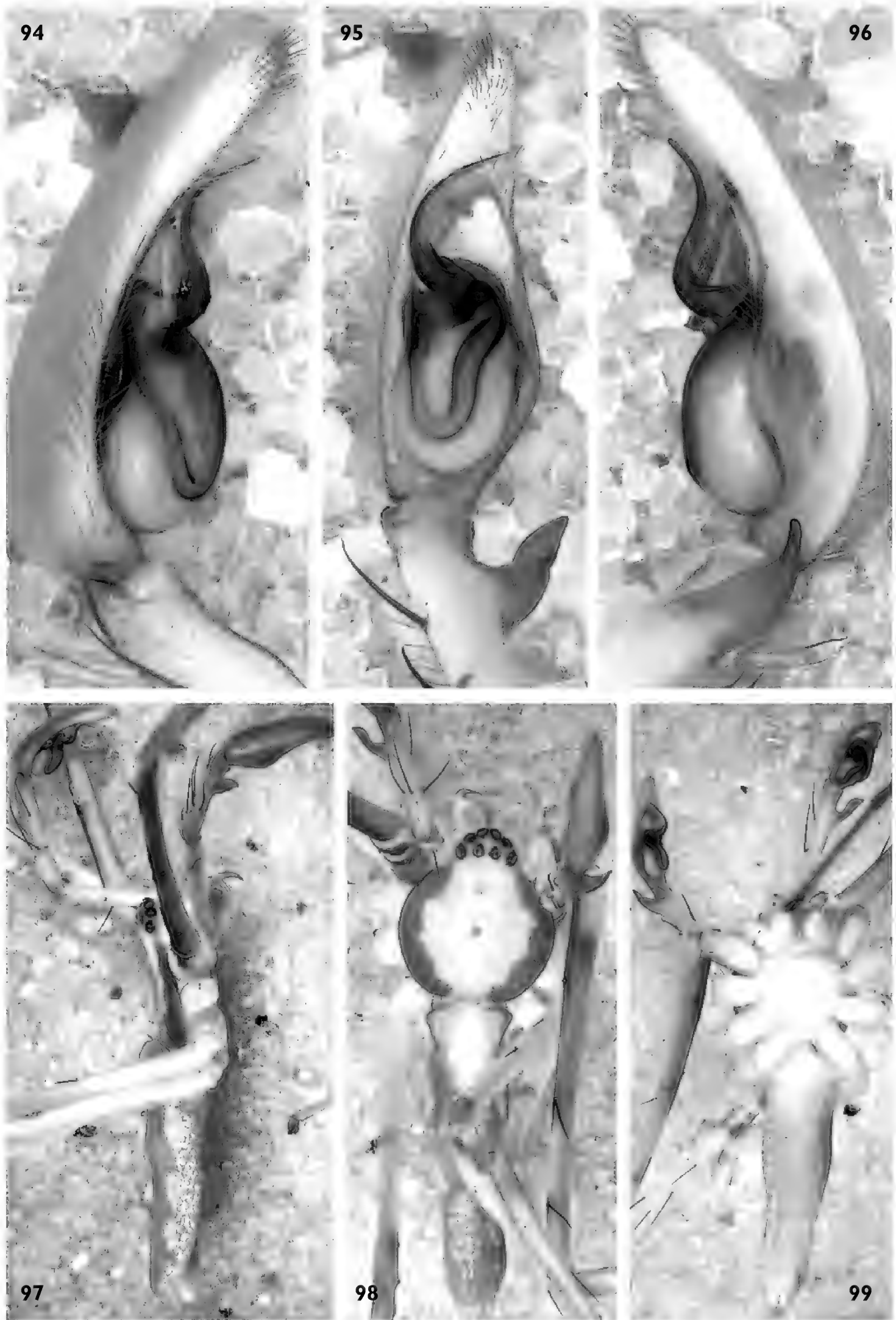
Further material examined. PANAMA. 1 ♂, Chiriquí, Reserva Forestal Fortuna, Quebrada Honda, 1 hectare Pancoding inventory, 8°45'00.3"N, 82°14'20.7"W, 1135 m, 7.–12.VI.2007, M. Arnedo, D. Dimitrov, G. Hormiga, F. Labarque and M. Ramírez legs. (MACN 16833); 2 ♀♀, same locality, 20.VI.2008, L. Piacentini, L. Benavides and F. Labarque legs. (MACN 16835); 1 ♀, 6 immatures, Coclé, P. Nac. G.D. Omar Torrijos Herrera, El Cope, 1 hectare Pancoding inventory, 8°40'5.1" N, 80°35'33.3" W, 760 m, 4.–9.VI.2008, M. Arnedo, L. Benavides, G. Hormiga, F. Labarque, M. Ramírez legs. (MCNB 2008-0986; MACN); 1 ♂, 1 immature, P. Nac. Altos de Campana, 1 hectare Pancoding inventory, 8°41'00.4" N, 79°55'47.4" W, 895 m, 14.–19.VI.2007, M. Arnedo, D. Dimitrov, G. Hormiga, F. Labarque, M. Ramírez legs. (MCNB 2008-0985; MACN). Voucher codes SFU2NBD019, preparation codes FML-00593-596, LNP-00236-237. COSTA RICA. 1 ♀ (PJ 2852), Talamanca, 01.09.1882, Bovallius leg. (NHRS). 1 juv. ♀ (PJ 1644), Alajuela Province, Cordillera de Tilarán, ca. 45 km NW of San Ramón, road to Reserva Biológica Alberto Manuel Brenes, primary, submontane rainforest, vegetation along the road, 900 m alt., 10.3.2001, W. Lapinski leg. (SMF). 1 subadult ♀ (PJ 3122), Costa Rica, Heredia Province, La Virgen de Sarapiquí, Reserva Biológica Tirimbina, ca. 160 m ü. NN, under palm leaf (42 x 6 cm) hanging over forest stream, 08.06.2008, 2.00 a.m., W. Lapinski leg. (SMF) [epigyne and vulva were developed under cuticle]. 1 ♀ (PJ 3117), Costa Rica, Heredia Province, La Virgen de Sarapiquí [Sarapiquí?], Reserva Biológica Tirimbina, ca. 180 m alt., under leaf of Melastomataceae sp., ca. 1.8 m distance from ground, in forest, 07.05.2008, 9:50 p.m., W. Lapinski leg. (SMF).

Diagnosis. Males: embolus arising prolaterally on tegulum with smooth teeth at base and a lamina widest medially at the end; conductor well developed, hammer-shaped; RTA relatively distant from cymbium (Figs 80-81, 94-96). Females: Copulatory openings situated laterally, appearing as large circles (in some cases filled with [mating] plug); epigynal furrows absent; posterior epigynal margin with inconspicuous lobe(s) (Fig. 82). Fertilisation ducts short, situated in the centre of internal duct system, the latter with two blind ending appendages, one long, pointing in a posterior direction, the other short, pointing in an anterior direction, with glandular pores at its tip (Figs 83-86).

Description. Male (MACN 16833). Total length 8.61. Prosoma: 3.12 long, 2.72 wide. Opisthosoma: 5.49 long, 0.28 wide. Eye diameters and interdistances: AME 0.18, ALE 0.18, PME 0.14, PLE 0.16, AME–AME 0.1, AME–ALE 0.06, PME–PME 0.18, PME–PLE 0.24, AME–PME 0.18, ALE–PLE 0.20. Legs: I: femur 9.05, patella 1.62, tibia 9.45, metatarsus 10.76, tarsus 3, total 33.88; II: 8.89, 1.72, 9.62, 11.08, 3.04, 34.35; III: 5.74, 1.38, 6.14, 6.63, 1.92, 21.81; IV: 7.11, 1.38, 6.71, 8.73, 2.28,



Figures 80-93. *Anaptomecus longiventris* Simon, 1903 (**80-81** ♂ from Panama **82-93** ♀ from Costa Rica, NHRS PJ 2852). **80-81** Left ♂ palp (**80** ventral **81** retrolateral) **82** Epigyne, ventral **83**, **85** Internal duct system, dorsal (**85** detail, left half) **84**, **86** Schematic course of internal duct system, dorsal **87** Prosoma, lateral **88** Eyes, dorsal **89** Chelicerae, ventral **90** Labium and gnathocoxae, ventral **91** Trilobate membrane, distal metatarsus, dorsal **92** Left palpal claw, prolateral **93** Prolateral claw of left leg I, prolateral. C – conductor; CD – copulatory duct; E – embolus; FD – fertilisation duct; GP – glandular pores; T – tegulum.



Figures 94-99. *Anaptomecus longiventris* Simon, 1903, ♂ from Panama. **94-96** Left ♂ palp (**94** prolateral **95** ventral **96** retrolateral) **97-99** Habitus (**97** lateral **98** dorsal **99** ventral).

26.21. Leg formula 2143. Spination: femur I–II: p1-1-1; d0-1-0; r1-1-1; femur III: p1-1-1; r0-1-1; femur IV: p0-1-0; r0-0-1; tibia I–II: p1-1-0; d1-1-0; r1-1-0; v2-2-0; tibia III–IV: p1-1-0; d0-1-0; r1-1-0; v2-2-0; metatarsus I–II: p1-0-0; r1-0-0; v2-2-0; metatarsus III: p1-1-0; r1-0-0; v2-2-0; metatarsus IV: p1-1-0; r1-1-0; v2-2-2.

Colouration (Figs 97–99). In live specimens, prosoma pale green with olive green margins and fovea. Chelicerae pale yellow, anterior base pale green. Pedipalps and legs pale yellow with light brown markings at the base of the spines. Sternum, gnathocoxae and labium pale yellow. Opisthosoma pale orange, with two large, yellow dots dorsally and two yellow and white stripes laterally. Colour fading in ethanol, leaving a whitish pale appearance; dorsal prosoma with dark marginal band (Fig. 98).

Female (MACN 16835). Total length 10.11. Prosoma: 3.48 long, 3.04 wide. Opisthosoma: 6.63 long, 1.76 wide. Eye diameters and interdistances: AME 0.12, ALE 0.18, PME 0.14, PLE 0.14, AME–AME 0.14, AME–ALE 0.08, PME–PME 0.20, PME–PLE 0.26, AME–PME 0.24, ALE–PLE 0.24. Legs: I: femur 5.98, patella 1.6, tibia 6.71, metatarsus 6.63, tarsus 1.92, total 22.84; II: 5.82, 1.56, 6.46, 6.3, 1.92, 22.06; III: 4.04, 1.3, 4.2, 4.28, 1.38, 15.20; IV: 4.64, 1.2, 4.36, 4.36, 1.62, 16.18. Leg formula 1243. Spination: femur I–II: p1-1-1; d0-1-0; r1-1-1; femur III: p0-1-0; r0-1-1; femur IV: p0-1-0; tibia I–II, IV: p1-1-0; r1-1-0; v2-2-0; tibia III: p1-1-0; d0-1-0; r1-1-0; v2-2-0; metatarsus I–II: p1-0-0; r1-0-0; v2-2-0; metatarsus III–IV: p1-1-0; r1-0-0; v2-0-0. Chelicerae with 3 anterior and 7 posterior teeth, with ca. 20 denticles in a patch (Fig. 89). Palpal claw with 5–6 teeth (Fig. 92), leg claw with 19–20 teeth (Fig. 93). Median hook of trilobate membrane acuminate and extending beyond lateral projections, may be bent (Fig. 91).

Copulatory organ as in diagnosis. Epigynal field not recognisable. Posterior margin of epigyne with two indistinct lobes.

Colouration as in male, slightly darker.

Variation. Males (n=2): total length 8.61–10.59; prosoma 3.52–3.12; femur I 9.7–9.05. Females (n=3): total length 10.11–11.74; prosoma 3.48–3.96; femur I 5.98–6.78. Median sac-like parts of the internal duct system may be considerably smaller and not touching each other.

Natural history. One female collected with a spherical egg sac, containing 76 spiderlings. In Costa Rica all specimens were observed on leaves of shrubs and lower tree branches.

Distribution. Ecuador, Eastern Panama and Costa Rica.

Anaptomecus temii sp. n.

urn:lsid:zoobank.org:act:C9786DE2-401A-4087-87D1-2D78D792F926

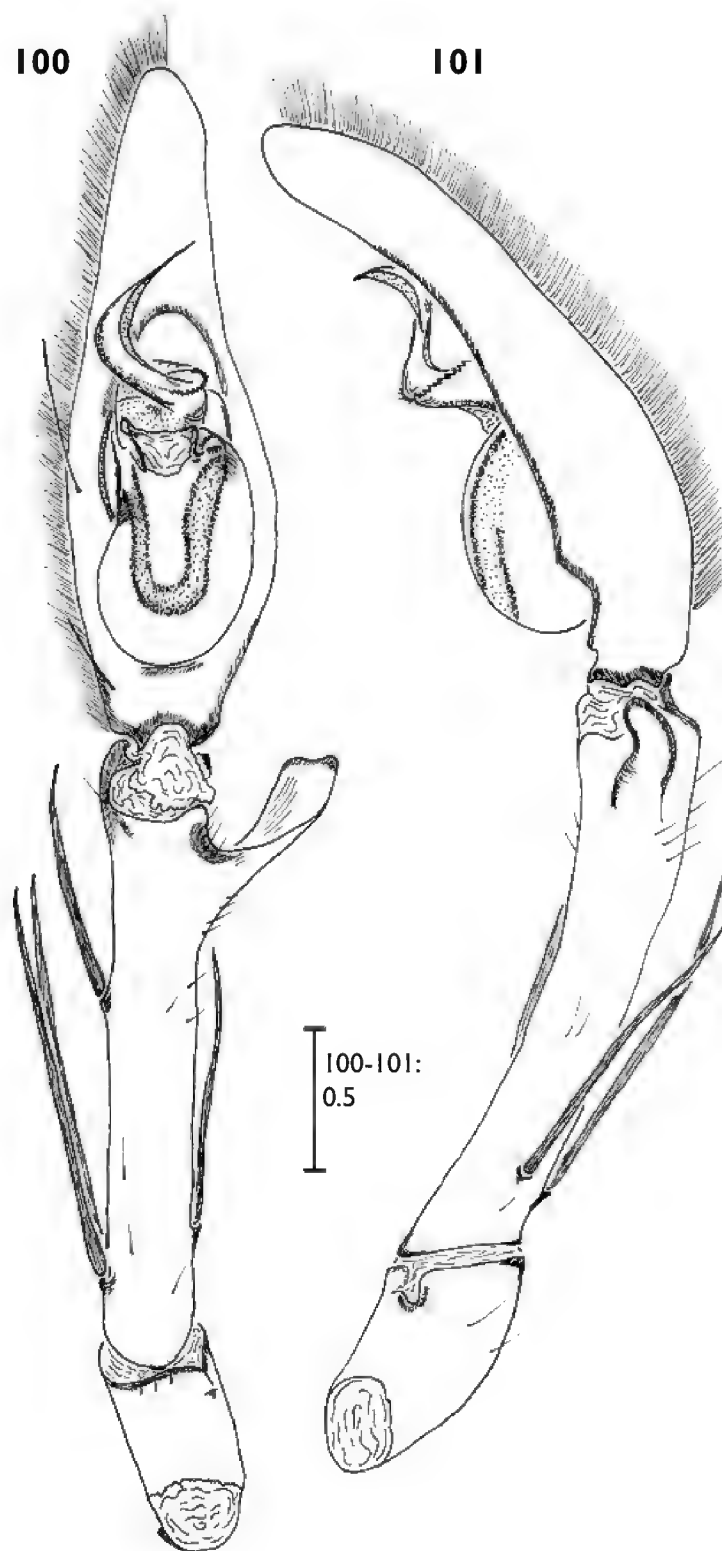
Figs 100–101

Type material. ♂ holotype from Panama, Panama Province, P. Nac. Altos de Campana, 1 hectare Pancoding inventory, [8°41'00.4" N, 79°55'47.4" W], 895 m, 14.–19. VI.2007, M. Arnedo, D. Dimitrov, G. Hormiga, F. Labarque, M. Ramírez leg., vou-

cher codes SCU2NDH005, preparation codes FML-00605 (MACN 16834). Paratype: 1 ♂, same data as for holotype; voucher codes SCB1DGR001, preparation codes LNP-00397-398 (MCNB 2008-0987).

Etymology. The specific name honours Temistocles “Temi” Tejedor, who provided logistic support to the PANCODING team during the fieldwork in Panama in June 2007 and 2008 that led to the discovery of this species. His hospitality and friendship were essential for the successful bioinventorying of the spiders and water beetles of the Panamanian cloud forests; name in genitive case.

Diagnosis. Males: embolus emerging mesally with well developed teeth at base and a smooth lamina at the end, conductor reduced, RTA relatively close to cymbium (Figs 100-101).



Figures 100-101. *Anaptomecus temii* sp. n., ♂ holotype from Panama, left ♂ palp (100 ventral 101 retrolateral).

Description. Male (MACN 16834, holotype). Total length 10.87. Prosoma: 4.08 long, 2.92 wide. Opisthosoma: 6.79 long, 1.72 wide. Eye diameters and interdistances: AME 0.20, ALE 0.18, PME 0.16, PLE 0.18, AME–AME 0.12, AME–ALE 0.08, PME–PME 0.18, PME–PLE 0.22, AME–PME 0.26, ALE–PLE 0.24. Legs: I: femur 10.76, patella 1.80, tibia 12.22, metatarsus 12.71, tarsus 3.08, total 40.57; II: 10.11, 1.94, 11.57, 12.71, 2.96, 39.29; III: 6.79, 1.50, 7.35, 6.95, 1.96, 24.55; IV: 8.81, 1.60, 8.65, 9.70, 2.44, 31.2. Leg formula 1243. Spination: femur I–II: p1-1-1; d1-0-1; r1-1-1; femur III: p1-1-1; r1-1-1; femur IV: p1-1-0; r1-0-0; tibia I–II: p1-1-0; d1-1-0; r1-1-0; v2-2-0; tibia III–IV: p1-1-0; d0-1-0; r1-1-0; v2-2-0; metatarsus I–II: p1-0-0; r1-0-0; v2-2-0; metatarsus III: p1-1-0; r1-1-0; v2-2-0; metatarsus IV: p1-1-1; r1-1-1; v2-2-2.

Colouration. Prosoma pale yellow with brown margins, anterior dots and fovea. Chelicerae pale yellow. Pedipalps and legs pale yellow with olive green markings at the base of the spines. Sternum, gnathocoxae and labium pale yellow. Opisthosoma pale orange, with three yellow and white large dots laterally.

Variation. Males (n=2): total length 10.87–10.59; prosoma 4.08–3.76; femur I 11.25–10.76.

Distribution. Eastern Panama.

Anaptomecus levyi sp. n.

urn:lsid:zoobank.org:act:958CE5F6-DAC4-4168-ACFC-791D68212182

Figs 102–113

Type material. ♀ holotype (PJ 2856), Colombia, ?Gosomoco, 800 m, Fassl, NHMW.

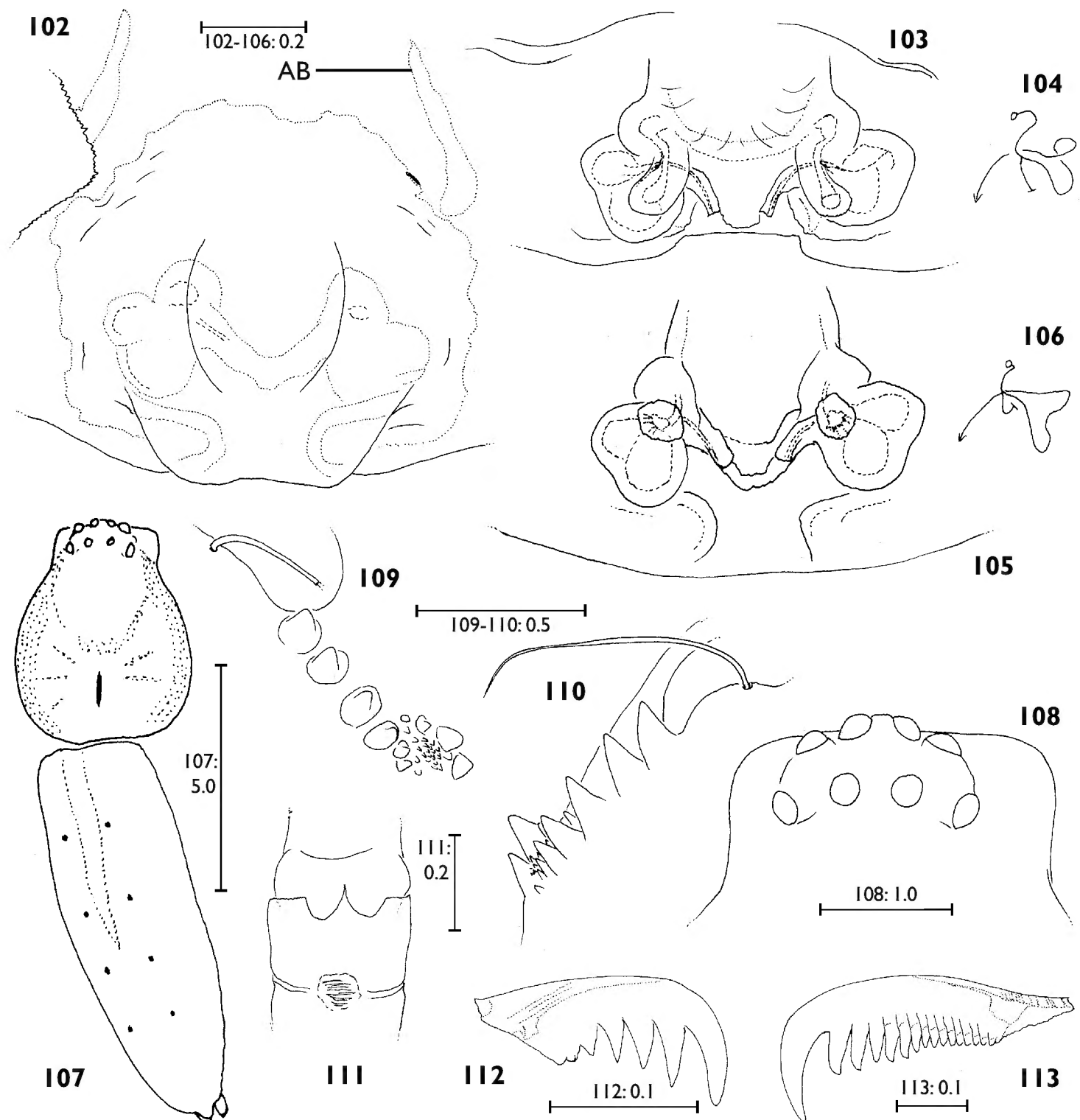
Note. In a letter from Jürgen Gruber to Herbert Levi from 1986 the questionable locality “Gosomoco” is discussed. According to information of JG reported in this letter, there is a report of the lepidopterologist A.H. Fassl from Teplitz (Bohemia) who collected with his brother and another colleague 1888–1912 in Colombia. Fassl mentioned in one of his travel reports a “Sosomuco” where he collected one year in a mountain forest in altitudes of 800–1200 meters. This “Sosomuco” is located approximately a two day march east of Bogota.

Etymology. The specific name honours Gershom Levy (1937–2009) for his important contributions to the knowledge about spiders and scorpions from Israel and the Middle East; name in genitive case.

Diagnosis. Opisthosoma elongated, without conspicuous bright patches on its dorsal side (Fig. 107). Male unknown. Female: epigynal furrows present in centre of epigyne as moderately bent rims (Fig. 102); fertilisation ducts situated in the centre of internal duct system; glandular appendages of internal duct system directed dorsally, conspicuous; posterior epigynal margin with trapezoidal lobe (Figs 103–106).

Description. Female (holotype). Total length 14.1. Prosoma: 5.0 long, 4.1 wide, anterior width 2.3. Opisthosoma: 9.1 long, 3.0 wide. Eye diameters and interdistances: AME 0.26, ALE 0.31, PME 0.21, PLE 0.27, AME–AME 0.16, AME–ALE 0.04, PME–PME 0.27, PME–PLE 0.27, AME–PME 0.29, ALE–PLE 0.30, clypeus

AME 0.23, clypeus ALE 0.30. Palp: femur 2.5, patella 1.1, tibia 2.1, metatarsus -, tarsus 2.5, total 8.2; legs: I 7.8, 2.3, 8.5, 7.8, 2.2, 28.6; II: 7.7, 2.4, 8.4, 7.8, 2.2, 28.5; III: 5.6, 1.8, 5.9, 5.1, 1.6, 20.0; IV: 6.9, 2.0, 6.1, 6.4, 2.0, 23.4. Leg formula 1243. Spination: palp 121, 101, 2121, 1014; femur I–III 323, IV 321; patella 000; tibia 2024; metatarsus I–II 1014, III 2014, IV 3035. Ventral tarsus IV with few thin bristles. Chelicerae with ca. 20 denticles in a distinct field, 3 anterior and 6–7 posterior teeth (Figs 109–110). Palpal claw with 5 larger teeth and 1 tiny tooth (Fig. 112),



Figures 102–113. *Anaptomecus levyi* sp. n., ♀ holotype from Colombia. **102** Epigyne, ventral **103**, **105** Internal duct system (**103** anterior **105** dorsal) **104**, **106** Schematic course of internal duct system (**104** anterior **106** dorsal) **107** Habitus, dorsal **108** Eyes, dorsal **109–110** Chelicerae, ventral **111** Trilobate membrane, distal metatarsus, dorsal **112** Right palpal claw, retrolateral **113** Retrolateral claw of left leg IV, retrolateral. AB – anterior bands of epigynal field.

leg claw IV with 17 teeth (Fig. 113). Trilobate membrane with pointed median hook and blunt lateral projections (Fig. 111).

Copulatory organ as in diagnosis. Epigynal field rounded, as long as wide, with distinct anterior bands, the latter indistinctly separated from epigynal field. One slit sense organ included marginally in epigynal field. Copulatory openings situated anteriorly at medial rims (Fig. 102). Internal duct system stout. Fertilisation ducts long, bent and narrow (Figs 103-106).

Colouration. The colouration of the holotype female is strongly faded. Body and appendages show in ethanol a yellow-brown colour. Dorsal prosoma exhibiting a darker marginal band. Legs dorsally having small indistinct spots. Dorsal opisthosoma with bright guanine crystals, which extend laterally, and four pairs of small muscle sigilla (Fig. 107).

Distribution. Colombia (known only from the type locality).

Acknowledgements

Thanks for hospitality to Christine Rollard (MNHN), Torbjorn Kronestedt (NHRS), Jürgen Gruber (NHMW) and Paul Hillyard (NHM) during PJ's visits in the particular collections and for theirs and Laura Leibensperger's and Herbert Levi's (MCZ) efforts for loaning specimens as well as financial support by the European Union (Access to Research Infrastructure Action of the Improving Human Potential Programme: Paris – PARSYST, Stockholm – HIGHLAT, London – SYS-RESOURCE). PJ also thanks Witold Lapinski (University Ulm) for providing specimens of *Anaptomecus longiventris* from his collecting in Costa Rica. CAR likes to acknowledge an Ernst Mayr grant from the Museum of Comparative Zoology at Harvard University, a Theodore Roosevelt Memorial fund from the American Museum of Natural History, and Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP grants # 02/11277-9; 06/61167-6). FML wishes to acknowledge the PANCODING project, a Fundación BBVA (3^a Convocatoria de Ayudas a la Investigación en Biología de la Conservación) grant to this project and a doctoral fellowship from CONICET. Also he is grateful to STRI of Panama, which provided the authorisation permission and logistic support during PANCODING bioinventorying to work on the Panama's National Parks, he would also like to thank the people from National Parks for assistance. Very special thanks to Carlos Espinoza and Alberto Gonzalez who provided invaluable logistic support at RF Fortuna. Lic. Amarilis Mendoza, director of ANAM in La Chorrera, facilitated fieldwork in Altos de Campana National Park. FML also wishes to thank Gustavo Hormiga, Dimitar Dimitrov and Ligia Benavides (GW), Miquel Arnedo (UB), Martín Ramírez and Luis Piacentini (MACN) for their help and orientation in the field work that provided the specimens of *Anaptomecus* from Panama; also to Luis Piacentini for providing stereomicroscope digital images.

References

- Banks N (1929) Spiders from Panama. Bulletin of the Museum of Comparative Zoology at Harvard College 69: 53-96.
- Bonnet P (1955) Bibliographia araneorum. Douladoure, Toulouse 2 (1): 1-918.
- Bonnet P (1957) Bibliographia araneorum. Douladoure, Toulouse 2 (3): 1927-3026.
- Bonnet P (1958) Bibliographia araneorum. Douladoure, Toulouse 2 (4): 3027-4230.
- Caporiacco L di (1955) Estudios sobre los aracnidos de Venezuela. 2a parte: Araneae. Acta biologica venezuelica 1: 265-448.
- Gerschman de P, BS, Schiapelli RD (1965) El género *Polybetes* Simon, 1897, en la Argentina (Araneae-Sparassidae). Revista del Museo argentino de Ciencias naturales Bernardino Rivadavia (Ent.) 1: 313-339.
- International Commission on Zoological Nomenclature (1999) International code of zoological nomenclature. Fourth Edition. London: The International Trust for Zoological Nomenclature, 306 pp.
- Jäger P (1998) First results of a taxonomic revision of the SE Asian Sparassidae (Araneae). In: Selden PA (Ed) Proceedings of the 17th European Colloquium of Arachnology, Edinburgh, 1997. British Arachnological Society, Burnham Beeches, Bucks, 53-59.
- Jäger P (2001) Diversität der Riesenkrabbenspinnen im Himalaya. Über eine Radiation zweier Gattungen in den Schneetropen. (Araneae: Sparassidae: Heteropodinae). Courier Forschungsinstitut Senckenberg 232: 1-136.
- Jäger P (2002) Heteropodinae: transfers and synonymies (Arachnida: Araneae: Sparassidae). Acta Arachnologica 51 (1): 33-61.
- Jäger P (2004) A study of the character 'palpal claw' in the spider subfamily Heteropodinae (Araneae: Sparassidae). In: Logunov DV, Penney D (Eds) Proceedings of the 21st European Colloquium of Arachnology, St.-Petersburg, 4-9 August 2003. KMK Scientific Press, Moscow, 107-125.
- Jäger P (2008) Revision of the huntsman spider genus *Heteropoda* Latreille 1804: species with exceptional male palpal conformations (Araneae: Sparassidae: Heteropodinae). Senckenbergiana biologica 88 (2): 239-310.
- Jäger P, Kunz D (2005) An illustrated key to genera of African huntsman spiders (Arachnida, Araneae, Sparassidae). Senckenbergiana biologica 85 (2): 163-213.
- Jäger P, Rheims CA (2008) On the genera *Origes* Simon 1897, *Prusias* O.P.-Cambridge 1892, *Tibellomma* Simon 1903 and *Paenula* Simon 1897 from South and Central America (Araneae: Sparassidae). Senckenbergiana biologica 88 (1): 29-39.
- Järvi TH (1912) Das Vaginalsystem der Sparassiden. Eine morphologische, systematische und zoogeographische Studie über eine Spinnenfamilie. I. Allgemeiner Teil. Annales Academiae scientiarum Fennica 4 (1): 1-131.
- Järvi TH (1914) Das Vaginalsystem der Sparassiden. Eine morphologische, systematische und zoogeographische Studie über eine Spinnenfamilie. II. Spezieller Teil. Annales Academiae scientiarum Fennica (Ser. A) 4 (1): 118-235.
- Keyserling E (1880) Die Spinnen Amerikas, I. Laterigradae. Bauer & Raspe, Nürnberg 1, 283 pp.

- Lapinski W, Jäger P, Salazar Rodríguez A-H (2002) *Anaptomecus longiventris* Simon, 1903 (Araneae: Sparassidae), a spider species new for Costa Rica. *Arachnologisches Magazin* 19(5/6): 1-9.
- Mello-Leitão CF de (1940) Spiders of the Guiana forest collected by O. W. Richards. *Arquivos de Zoologia do Estado de São Paulo* 2: 175-197.
- Petrunkévitch A (1911) A synonymic index-catalogue of spiders of North, Central and South America with all adjacent islands, Greenland, Bermuda, West Indies, Terra del Fuego, Galapagos, etc. *Bulletin of the American Museum of Natural History* 29: 1-791.
- Platnick NI (2009) The world spider catalog, version 9.5. American Museum of Natural History, New York. <http://research.amnh.org/entomology/spiders/catalog/> (accessed: 15.I.2009)
- Rheims CA (2007) Revision of the Neotropical spider genus *Macrinus* (Araneae, Sparassidae). *Journal of Arachnology* 35: 159-170.
- Rheims CA (2008) On the neotropical genus *Adcatomus* Karsch (Araneae, Sparassidae). *Zootaxa* 1809: 61-66.
- Rheims CA, Jäger P (2008) Revision of the neotropical huntsman spider genus *Vindullus* Simon (Araneae, Sparassidae). *Journal of Arachnology* 36: 221-231.
- Rheims CA, Labarque FM, Ramírez MJ (2008) The South American genus *Quemedice* Mello-Leitão (Araneae: Sparassidae): familial placement and taxonomic revision. *Zootaxa* 1813: 60-68.
- Roewer CF (1954) Katalog der Araneen von 1758 bis 1940, bzw. 1954. *Bruxelles* 2: 1-1751.
- Simon E. (1903a). *Histoire naturelle des araignées*. Paris 2: 669-1080.
- Simon, E (1903b) Descriptions d'araignées nouveaux. *Annales de la Société entomologique de Belgique* 47: 21-39.